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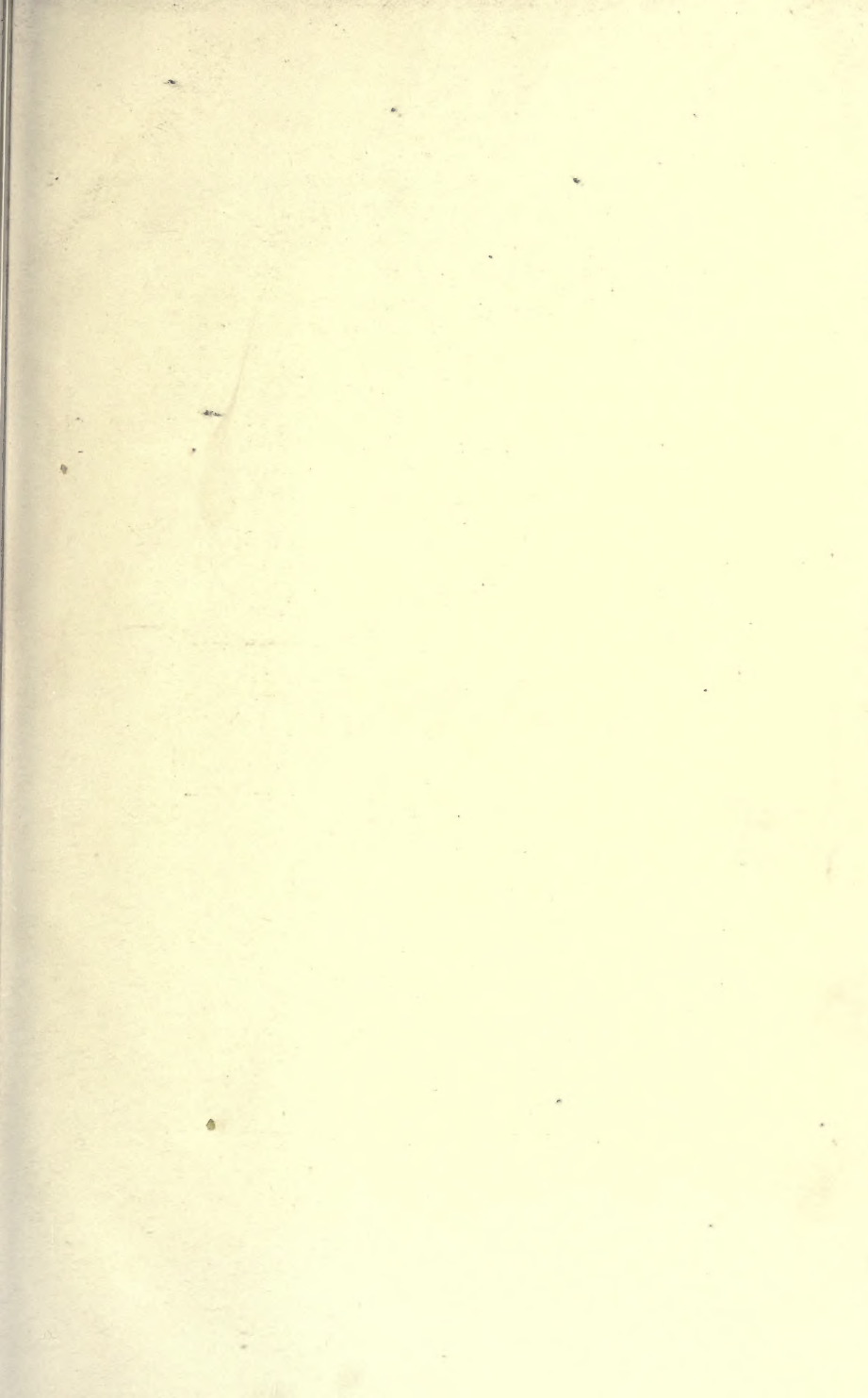
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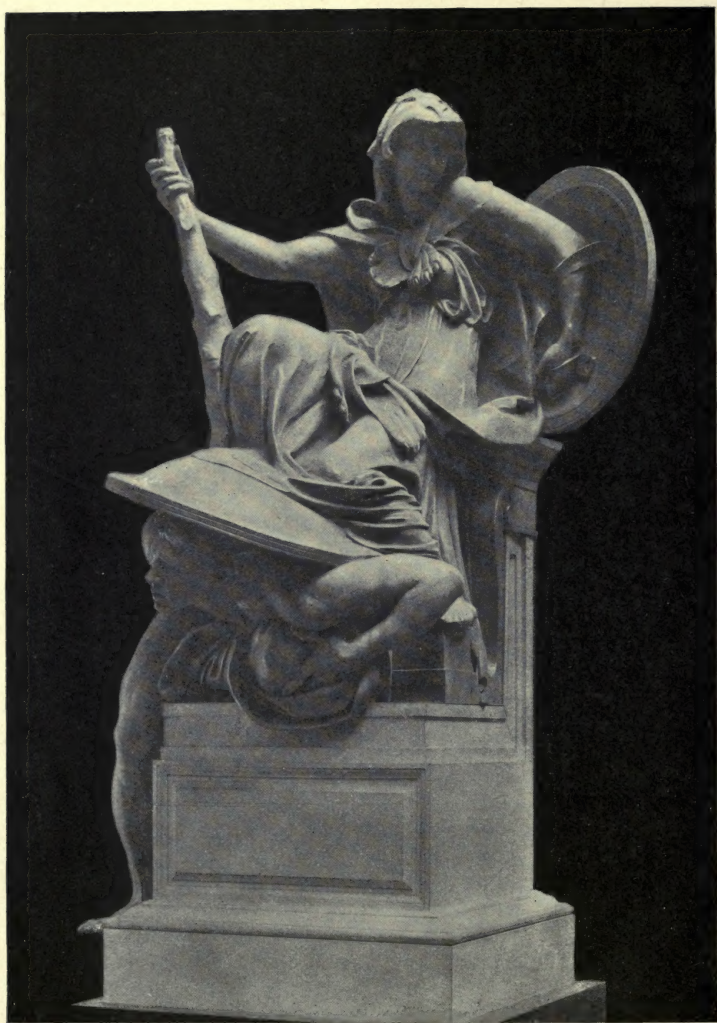
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TOGETHER WITH THREE SETS OF LOWER-
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FROM THE FINEST EXAMPLES AND PERIODS.
FOR SCHOOLS.

NOTE BY THE AUTHOR.

This Alphabet of Roman Capitals has been carefully enlarged from the inscription on the Trajan Column, Rome, the finest of any Roman letters available. Squaring is given, together with diagonal lines showing the thickest and thinnest parts of the round letters. The sets of lower-case letters are made up of (1) semi-uncial forms of the 7th—8th centuries; (2) Roman, from the Italian type of Nicholas Jensen, 15th century; (3) Italian round hand black letter, enlarged from choir books of the 16th century in the Victoria and Albert Museum.





BRONZE GROUP FROM THE WELLINGTON MEMORIAL, ST. PAUL'S CATHEDRAL, BY ALFRED STEVENS.—ILLUSTRATION OF COMPOSITION OF LINE.

THE PRINCIPLES OF DESIGN.

A TEXT-BOOK FOR TEACHERS,
STUDENTS AND CRAFTSMEN.

BY

G. WOOLLISCROFT RHEAD,

R.E., HON. A.R.C.A. LOND.

AUTHOR OF "A HANDBOOK OF ETCHING," "THE TREATMENT
OF DRAPERY IN ART," "STUDIES IN PLANT FORM," ETC.

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WITH FIFTEEN PHOTOGRAPHIC ILLUSTRATIONS AND
UPWARDS OF 400 LINE DRAWINGS BY THE AUTHOR.



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PREFACE.

A NEW book upon the principles of ornament has become a necessity to the Art teacher no less than to the Art student, for during the last two or three years an entirely new syllabus of the subject has been issued by the Board of Education, differing materially from the old one. This covers a much wider area, and properly so, as ornament in its wider sense covers the whole field of art, and it is only during the last century or so that the arts of painting and sculpture, and the decorative arts, have been divorced from architecture, and almost all tradition has been lost. The purpose of the present work is not so much to supply a few recipes which the student might get off by heart for the purpose of successfully passing the examination, supposing this were possible or desirable, but rather to assist him to form an intelligent understanding of the general scale and scope of the decorative arts. It must not be forgotten that examinations are but a means to an end, and not an end in themselves. Examinations can have no possible value except as indications of the degree of knowledge, or of the character of the information possessed by the different competitors. The system of cramming for a particular examination is indefensible from every point of view, and

the examiners are doing nothing but their duty in framing their questions in such a manner as to compel the student to make use of his intelligence, rather than to depend upon the memory only.

In a mere handbook on such a large subject as this, it is not possible to do much more than classify, and place the subject before the student with something like coherence and form.

The bibliography of the various portions of the subject is very extensive. The books devoted to the direct elucidation of principles are, however, comparatively few.

The student should, in preparing for the examination on "Principles," supplement his studies by something more than a mere reference to the following works—

Owen Jones' "Grammar of Ornament," which, although it appeared at the time when the decorative arts had reached perhaps their lowest ebb, still remains a standard work.

F. W. Moody's "Lectures and Lessons on Art." Those portions of the subject which Moody tackles are dealt with admirably well.

Walter Crane's "The Bases of Design," and "Line and Form."

Lewis F. Day's "Pattern Design" and "Ornament and its Application."

No mere book study will avail, however, unless the student can be induced to cultivate his powers of reason and analysis, and habits of observation.

Studies should be made of the familiar objects of

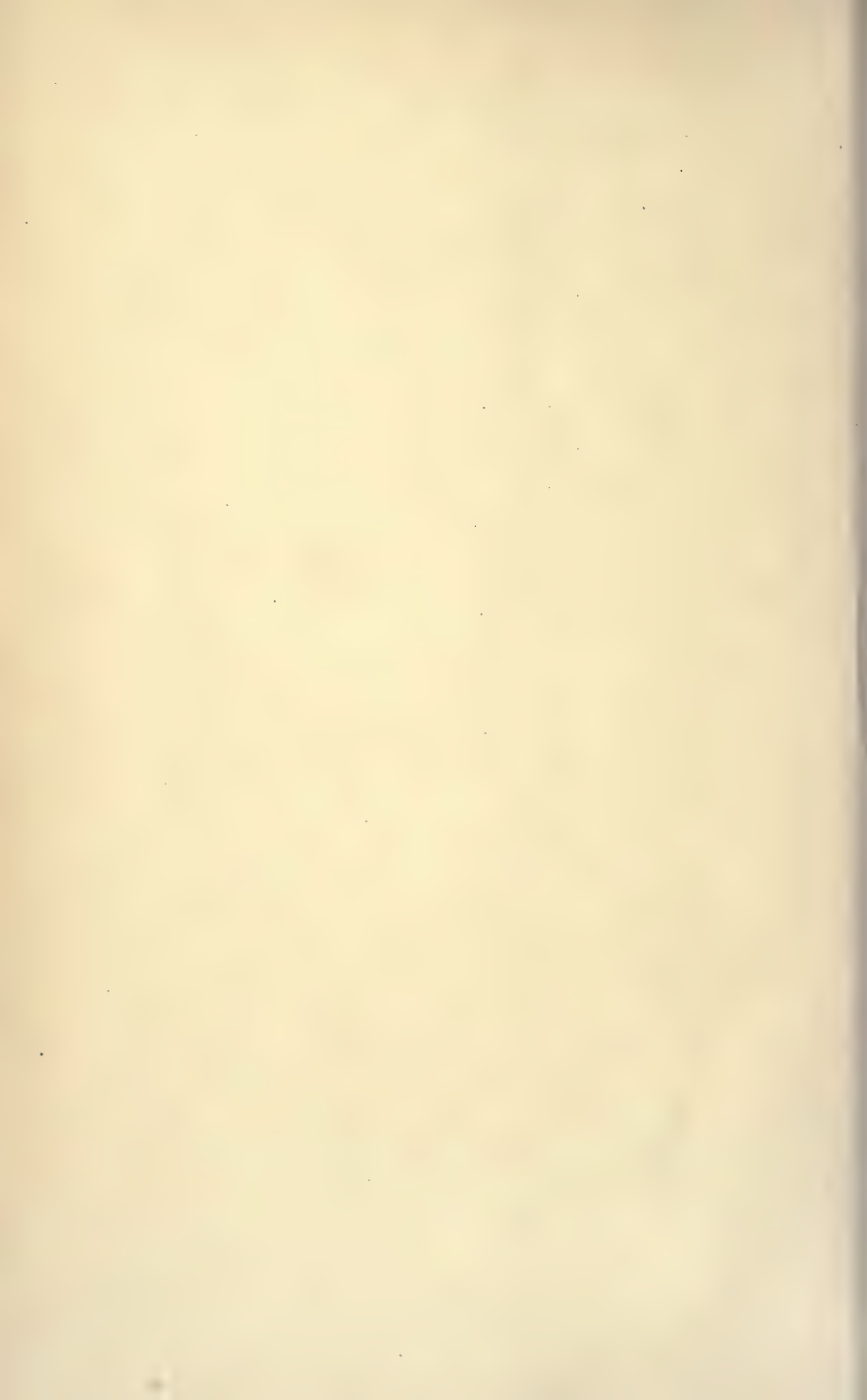
natural history ; of plant growth and form, and of the objects of daily use. *Drawings* not *sketches* should be made, analysing the form of the object and setting forth its salient facts. Drawing is like language, is language in fact, and its expression should be as clear, definite, and concise as possible.

Perhaps I may be allowed the pleasure of expressing my obligations to Mr. Lewis Day for permission to include four illustrations from his book on Stained Glass ; to Mr. Glazier for the Roman scroll from " Historic Ornament " ; to Mr. W. Matthews for the book cover designed by Louis Rhead ; to Miss Eleanor Rowe for the French coffer ; to Mr. R. H. Russell for the Tennyson drawing ; to Messrs. Liberty for the Catalogue cover ; to Messrs. Powell for the cartoon of the three angels ; and to Mr. R. Phené Spiers for the two Byzantine capitals, from " Architecture East and West," and also the Roman capital, from the " Orders of Architecture."

G. WOOLLISCROFT RHEAD.

LONDON,

May, 1905.



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THE PRINCIPLES OF DESIGN.

INTRODUCTION.

THE SYLLABUS OF THE BOARD OF EDUCATION.

THE general scheme of the present work mainly follows the lines indicated by this syllabus, which was originally drawn up and prepared by the examiners, Messrs. G. C. Haité and F. Hamilton Jackson, and subsequently modified in some few points by the Advisory Committee of the Board of Education. The leading features of the syllabus are here given, with one or two slight alterations and additions :—

This syllabus relates to the use of form and colour for decorative purposes. Certain directions of study are here indicated, likely to prove beneficial to candidates in the acquirement of an appreciation of principles, and their application to the Arts of Decorative Design.

Their attention is directed especially to :—

(a) The general proportions of Architectural form and examples of ornament, ancient, mediæval and modern,

especially as modified by processes of production, and the nature of materials.

(b) Structure and growth of plants, trees, shells, &c.

(c) Lines of growth and motion in animals, birds, ships, waves, &c.

(d) Analysis of form and design, distinguishing essential from subordinate elements.

(e) Geometry as the basis of surface pattern.

THE LAWS OR PRINCIPLES OF ORNAMENT.

The laws of ornament which have been deduced from the observation of nature in its application to good ornament are as follows:—

1. Symmetry and Balance.
2. Proportion and Spacing.
3. Subordination.
4. Repose.
5. Congruity.
6. Radiation.
7. Contrast, including Counterchange.
8. Repetition and Rhythm, including Alternation.
9. Unity.

The foregoing are the laws which are included in the syllabus as it at present stands; the following should, however, be added:—

10. Even Distribution.
11. Development.
12. Composition of Line.

Beauty in conjunction with Fitness is essential to good

ornament. By "Fitness" may be understood suitability in all the following directions :—

1. To the purposes which the object to be ornamented is to serve.

2. To the position which such object is intended to occupy.

3. To the material in which the ornament is expressed and to the materials to which it may be applied.

4. To the means wherewith it is to be executed.

The principles above enumerated are equally applicable in respect of schemes of colour as well as form, whether in flat or relief.

For the purposes of the examination in this subject, "Ornament" is understood to mean the embellishment or enrichment of an object.

Such enrichment or embellishment may be effected with the simplest as well as with more complex elements, and will depend for its success upon the application of such principles and laws as those enumerated above.

Direct transcripts from Nature, in which the close imitation of the actual appearance of things has been the first aim, are rarely ornamental in the sense which the term is here intended to convey.

Broadly speaking, for the sake of clearness, ornament may be divided into two classes :—

- A. Forms which have no suggestiveness of natural things; those, for instance, in which lines are fitted together or intermixed, so as to make shapes such as plaits, chequers, zig-zags, waved or undulating lines, squares or triangles, circles, ellipses, &c. Such are purely abstract in character, the interest or beauty in them arising chiefly from the correlation of lines and shapes in contrast or harmony one with another.

B. Forms in which lines, shapes, &c., are used to convey suggestions rather than faithful likenesses of natural objects, and of actual or fancifully imagined things, such as human beings, centaurs, animals, birds, masks, plants, garlands, architectural details, vases, heraldic devices, lettering, &c.

Most of the forms under A. would necessarily be of a geometrical character, whilst those under B. would involve greater variety of line, position, and shape in their construction.

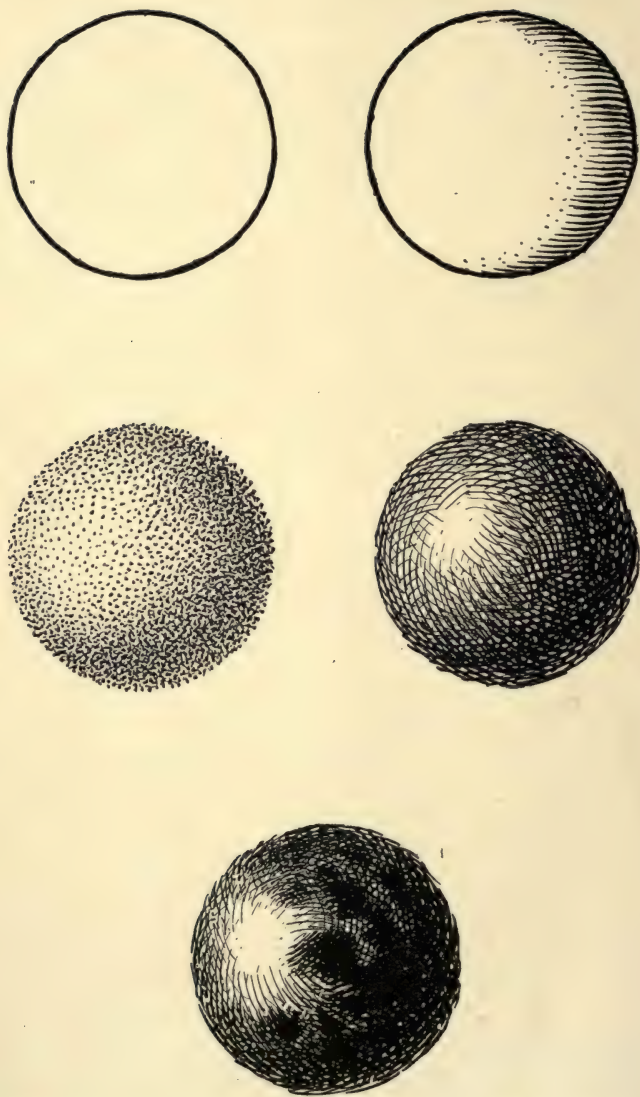
Such principles as the foregoing have been deduced from the best types of ornament wherever found. The careful study of such types shows how artists and craftsmen have agreed upon certain fundamental principles of ornament.

METHODS OF EXPRESSION.—Ornament may be expressed in two ways. First, by form and colour upon a plane surface, as in tapestry, carpets, needlework, and woven fabrics in mosaic, inlay of marble, wood or metal, leaded, stained and painted glass, pottery, stencil and painting. Secondly, by relief, as in wood and stone carving, or in modelled surfaces, metal work, jewellery, &c., all of which may or may not be combined with colour.

DIVISION OF SURFACE.—Plane surfaces, such as floors, walls and ceilings, may be divided into panels of various shapes, square, oblong, polygonal, circular, oval, &c., which may be either projecting, incised or sunk. They may be wholly or partially covered with diapers or repeating patterns, banded or striped, or a combination of these methods may be used.

Curved surfaces, such as the soffits of vaults or domes, may be treated in the same way. Here horizontal bands form rings, and in domes, vertical stripes suggest ribs.

VARIETY OF PLANE SURFACE.—Variety of surface includes the concave, the convex, the undulating and the flat. Texture may be divided into rough, smooth, glazed, polished or burnished. The effect of these varieties may be infinitely extended by their combination in varying proportions, as may be seen in the treatment of metal, marble, stone, brick and tile, wood and leather work, and in woven stuffs.



DIAGRAMS ILLUSTRATING THE GENERAL SCALE OF QUALITIES IN ART,

THE SCALE OF ART.

THE general scale of art, its different qualities and gradual development, is very well illustrated in the five globes given in the accompanying diagram. The first represents all barbaric and primitive art, and the early art of most countries, from the bone scratchings of the cave-dwellers, and the tatooing of the savage, to the earliest Byzantine mosaics and the earliest efforts of painting in Italy. Its general characteristics in ornament are: flat severity, pure conventionality, and evenness of distribution.

The second exhibits the same severity of outline, but relieved by a certain degree of light and shade, and would be represented by most of the earlier schools of painting, and the illustrations of early printed books. (See Illustration from the *Quatregio* of Frezzi, p. 92.)

The third represents the abandonment of outline, and in its place, simple, luminous shadows melting into soft light, and a more generally picturesque and less architectural treatment. In painting, these qualities would be illustrated by the work of Correggio.

The fourth exhibits a stronger contrast of light and shade, rich luminous shadow contrasted with strong light, such as seen in the works of Rubens, Titian and the late Venetians, and in later Venetian decorative work generally.

It was reserved to Rembrandt to carry the art of picturesque composition a stage further. In this stage the lights are focussed to their highest pitch, with the addition that the strongest darks are brought into direct

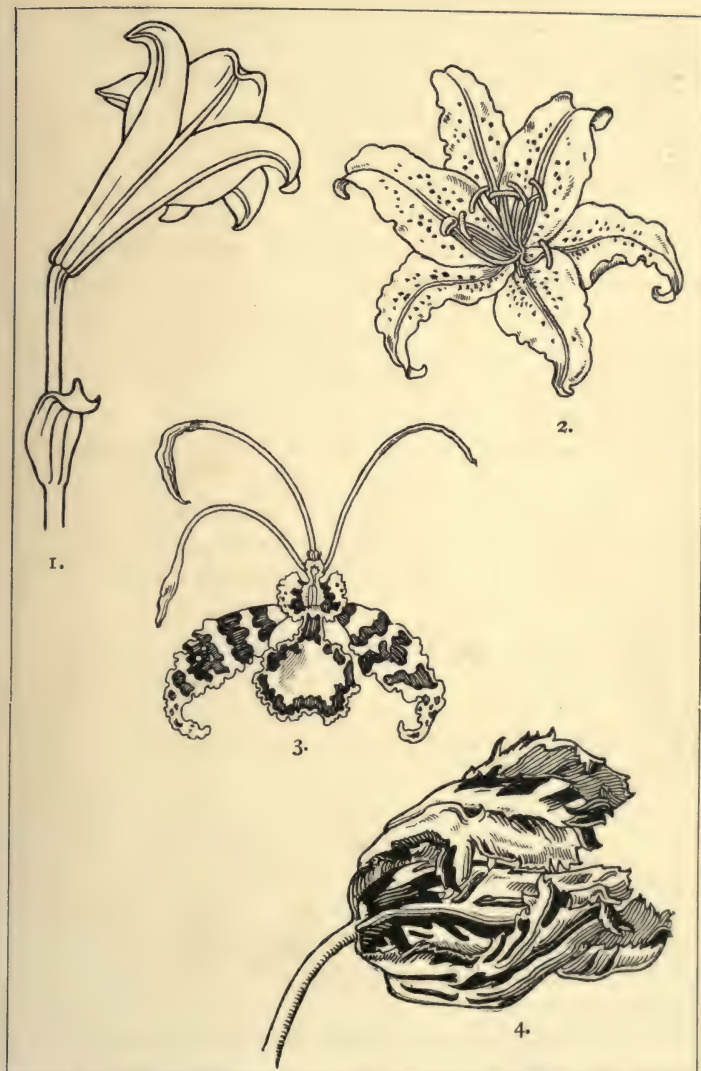
contrast with the highest lights, with the attainment of the utmost force as a result.

No new quality has been introduced in art since Rembrandt. The only possible exception is Turner, but what Turner did was to apply the principles which had already been practised in art generally, to the art of landscape painting, rather than to sound any new note. Indeed, those same principles had been applied to landscape by such men as Rubens, Titian, and the greater landscape painters, though with less power of design and poetic imagination than the English painter displayed.

The several qualities represented by these globes have also their counterpart in nature. Let the reader consider the severe reticence, the extreme purity of form and colour exhibited in the Madonna and Bermuda lilies, and contrast them with the wild *abandon* of the form and growth of the honeysuckle, the sunflower, the parrot tulip, and the different orchids.

The same gradation of qualities is observable in the development of Greek sculpture, from the flat barbaric "Gate of the Lions" at Mycenæ, to the alto-relievo frieze of the Great Altar at Pergamos, in which the utmost realism and dramatic movement is displayed. It is even illustrated in the five classic orders of architecture, from the severe Doric and Tuscan to the ornate Corinthian. In Gothic architecture, from the decline of Norman influence to the most extreme development of the Perpendicular. The whole story of Italian art betrays the same tendency, from the greatest severity and reticence to the utmost elaboration, freedom, and even licence.

Thus we see that in all the great periods of art, nature has been closely followed in its general development, in its reasonableness, coherence, and its continuity.



THE SCALE OF QUALITIES IN NATURAL FORM.

1. BERMUDA LILY.

2. LILIUM AURATUM.

3. BUTTERFLY ORCHID.

4. PARROT TULIP.

The go-as-you-please system, which obtains at the present day, under a mistaken regard for originality, is the result of an entire absence of tradition. An artist, so called, or self-styled, duly repairs to old lanes and cowsheds, under the impression that by reproducing as faithfully as may be, by the light of his own individuality, what he sees there, he is furthering the cause of art! He is really doing nothing of the kind. It is impossible to learn art in cowsheds. The *materials* for art may be gathered in cowsheds as well as elsewhere, as Swammerdam gathered the materials for a life's work from stagnant ponds; but art is a great tradition, which is one and indivisible, and *which can only be handed down from one individual to another*, passed on, so to speak, like the eye which Perseus stole from the Gorgons, "Mind to mind," as Mrs. Rosetti puts it. Turner never learned his art in cowsheds, but from the works of the great old masters. He advanced the art of landscape, but that was because he happened to be an artist of greater individual power than his masters in this branch of art, and was able to assimilate more of nature's truths.

As an instance of unbroken tradition through twenty centuries, the streets of Rome are at present named by means of incised marble slabs, with letters which are for all practical purposes as fine as those on the inscription on the Trajan Column! Let the London County Council consider this.

There are some who would have us believe that art is merely a question of pig's bristles and flake white. Broadly speaking, such things have nothing whatever to do with the matter.

It will be interesting and curious to listen for a moment to a voice which comes down to us from the 14th

century, Cennino Cennini (as translated by Christiana Herneingham), advising as to "what to do in the beginning of the pursuit of art." "Now then, you of noble mind, who are lovers of this good, come at once to art and adorn yourselves with this vesture—namely, love, reverence, obedience, and perseverance. *And as soon as thou canst, begin to put thyself under the guidance of the master to learn, and delay as long as thou mayest thy parting from the master.*"

Again, "This plan is adopted by those only who know but little of the art; but do you follow the method of colouring which I shall point out to you, *because Giotto, the great master, followed it.* He had Taddeo Gaddi, the Florentine, for his disciple for four-and-twenty years, who was his godson. Taddeo had Agnolo his son; Agnolo had me for twelve years, whereby I gained this manner of colouring; which Agnolo coloured with more charm and freshness than Taddeo his father."

It will be seen that it is the *personal* element which is of value. Nothing but the *personal* will adequately serve, and it is precisely this *personal* element which is so lacking in our present day system.

Originality is a quality which is very much misunderstood. It is in truth easy enough to be original if one does not mind being ridiculous. If any man was master of Renaissance ornament it was surely Alfred Stevens; yet the number of fresh ornamental motives which he was able to produce during his lifetime can probably be counted on the fingers of one hand.

A complete set of studies of plants drawn from the decorative standpoint would form a compendium of all the ornamental motives in existence. There is no ornamental motive, other than mere geometrical forms, which

has not been directly or indirectly suggested by nature. It is not possible to invent any new motive which is not already suggested by nature. Nature is the great inexhaustible well into which each individual designer lets down his little cup and dips; the most that each individual can hope to do is to devise new combinations of motives already existing, or to invest them with a new character. Properly speaking, there is no such thing as originality in artistic effort, our triumphs of design are merely recollections or rearrangements of natural facts. Nature only invents.

If we should be asked, for instance, to invent the likeness of an inhabitant of the sun (supposing the sun to be inhabited), a being adapted to the environment of fire instead of earth and air, we should be exceedingly hard put to it. We should probably go upon the principle of development, and start with the human as the highest type we know. We might multiply the limbs, or, which would perhaps be the safer plan, have no limbs at all, and for features we should either elongate or shorten the nose, multiply the eyes, or place them, say, at the back of the head; or, as in the cases of Polyphemus and the Cyclops, place a single eye in the middle of the forehead, but, as in Polyphemus and the Cyclops, we should probably not know what to do with the sockets of the original eyes. The result would certainly not be beautiful.

There *is*, however, such a thing as imagination. Imagination is the seeing eye, the faculty of perceiving what is finest in nature and reproducing it in such a manner as to suggest beautiful ideas, or recall beautiful impressions.

Most of us as workers in the decorative arts have at last grasped the great fact which we have learned from the study of past art, viz., that the material we happen to be working in determines the character of the work. That

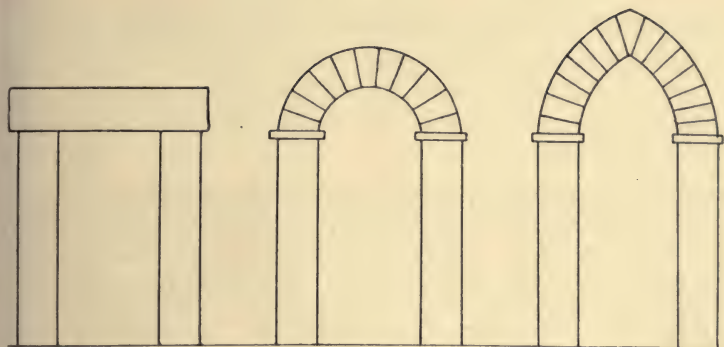
a stained glass window is part and parcel of the architecture of a church and must be treated as such, and not as a hole in the wall through which a picture may be seen, and that wrought-iron should not partake of the character of pottery ; but, for us of the 20th century, the old ornamental forms, although right for the times which produced them, are entirely wrong for us, except as lights to guide us through new and untrodden paths—paths, however, which have already been indicated by nature.

Although the chief object, indeed the only object, of this work is the elucidation of principles or laws, yet it may be well to caution the student against a too rigid adherence to a fixed formula ; as in both art and nature, the last word is *never* said. Laws make excellent servants, but bad masters. They are invaluable as guides, and do good yeoman service in clearing away the brushwood from the intricate paths of art ; but after all, when one's neat little theoretic structure is raised, some strong-lunged son of Boreas will come round, and, at a breath, blow it away. This is a constantly repeated experience in art. Sir George Beaumont lays down the law that there should be one brown tree in every landscape, instantly landscapes are painted all brown, or with no brown at all. Sir Joshua formulates his principle, which happens to suit his own methods of technique excellently well, that blue should not predominate in a pictorial scheme, and Gainsborough produces his "Blue Boy," one of the most successful pictures of modern times.

Painters at the present time, seeing an art so different to, and perhaps so much at variance with, Western ideas, as in the Japanese, and yet at the same time so exquisitely fresh and piquant, are beginning to doubt whether, at any

rate, their own methods are the *only* ones possible. The old story of the "man born to be king" is constantly repeating itself, and students, whilst taking the fullest advantage of the light of past experience, should always remember that before them lies the great undiscovered land, which is ready for, and awaiting the occupation of the strong.

The so-called new decorative movement had its origin in England; it was begun by Bewick and Blake, and the tradition was carried on by a few men of the so-called Pre-Raphaelite school, Ford Madox-Brown, Rossetti, Burne-Jones, and to a certain extent, William Morris, and has since been taken up by a crowd of men working on similar lines, and fired by their spirit and example. If we are to build up a modern school of ornament having any vitality, it will be by a single-hearted return to the great source of all styles, nature, seen, however, by the light of the old work. By a searching study of natural forms, a seizing hold of the ornamental suggestion which the infinite variety of natural forms give; these still contain suggestions infinitely more varied and beautiful than ever was conceived by Greek or by Goth.



THE ARCHITECTURAL BASIS.

PROPOSITION I. in the general principles advocated in Owen Jones' "Grammar of Ornament" runs as follows:—

"The Decorative Arts arise from, and should properly be attendant upon Architecture."

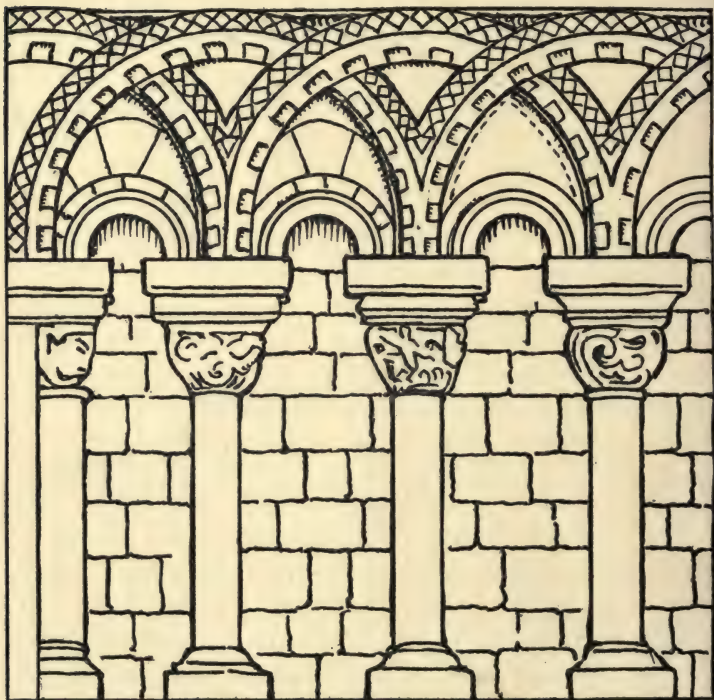
Architecture may therefore be said to form the base upon which the whole superstructure of the Decorative Arts rests.

This architectural basis must never be lost sight of in any comprehensive scheme of artistic teaching, or in any outlook over the field of decorative design, since the first arts sprang from the physical necessities of man, and the very first of man's necessities is that of having a roof to cover him.

DEVELOPMENT OF THE ARCH.—The leading features of architectural form have always been illustrated by the development of the arch, and it will be instructive to roughly trace this development from the primitive wooden structures of the early period of man's history.

In the building or construction of one's primitive

dwelling, the difficulties naturally lie, not in the rearing of the walls, or even in the making of the foundations (since it requires no ingenuity to place one stone upon another and produce a kind of fence), but in the providing means



TRANSITIONAL ARCADE, CANTERBURY.

of ingress and egress, for the admission of light, and for the roofing over of the structure. What then would be the first idea which would occur to the primitive mind for the making of a doorway? It would naturally be to

place two stones in an upright position and another on the top horizontally. This is in fact what was done, and represents the simple column and pediment, of which Stonehenge is the simplest and most familiar example. This simple column and pediment in its various developments represents the type of architectural form throughout the whole of the Egyptian, Assyrian and Greek period.

With the Romans, in their great public works, the use of the arch practically became a necessity. The Romans, however, cannot be said to have invented the arch, but only to have adopted it as their general type of architectural form; but the general use of the arch opened up a long vista of possibilities in architecture and led to vaulting, to the dome with its opportunity for decorative display, and to arcades, with their spandrils, to the various qualities, structural and ornamental, with which we are familiar in Roman, Byzantine and Renaissance work.

It was not till the 12th century that any further structural change in architecture took place. This change was the introduction of the pointed arch, which is the essential feature of Gothic or mediæval architecture. The form is shown as a decorative feature in Romanesque work in an arcade of interlacing round arches at Canterbury Cathedral (see Illustration, p. 16).

It must not, however, be supposed that these three divisions are absolute, they only generally represent the different periods of architectural form, as both round and pointed arches have existed from very early times; both have been found to exist in Egypt as early as the 4th dynasty, but for practical purposes these three divisions, which are Professor Ruskin's, will serve.

THE CLASSIC ORDERS OF ARCHITECTURE.

An order of architecture consists of a column with its sub-divisions of shaft, capital and base, supporting an entablature consisting of architrave, frieze and cornice. Pedestals were afterwards introduced with the object of increasing the height without altering the other dimensions. The pedestal is also divided into three parts, base, dado and cornice. There are three Grecian orders, the Doric, Ionic and the Corinthian, and two Roman orders, the Tuscan and Composite. The Romans had also modifications of the three Grecian orders.

The leading features of the orders may be briefly described as follows:—

THE DORIC.—This is the earliest and most severe of the five orders. The most perfect example of this order is the Parthenon at Athens, B.C. 438. The column, which has no base, springs directly from the stylobate or steps, and is fluted with twenty elliptical flutes, which finish directly under the capital. The neck is separated from the shaft by a deep narrow groove. The capital consists of a thick square block called the *abacus*, perfectly plain, with a finely-moulded *echinus* underneath, and finished with a series of five rings called annulets. The architrave is perfectly plain and is separated from the frieze by a band called the *tænia*. The frieze is one of the most striking portions of this order, and consists of a number of square sculptural panels separated by a series of vertical grooved bands called triglyphs; beneath the triglyphs and underneath the *tænia* are a series of ornamental drops called guttæ. The cornice consists of a square mutule band, separated by a fillet from the ovolo moulding, which is usually its crowning member. In considering this order, it should be remembered that its comparative

plainness was re-deemed by the introduction and lavish use of colour.

THE IONIC.—The principal feature of this order is the remarkable spiral ears or volutes, which form the termination of the cushioned cap. The abacus is much thinner than that of the Doric, and is moulded with an echinus. A second and larger echinus, with an enriched bead, forms the bell or body of the capital. The shaft is enriched with twenty-four elliptical flutes separated by a fillet, and the whole order is lighter than that of the

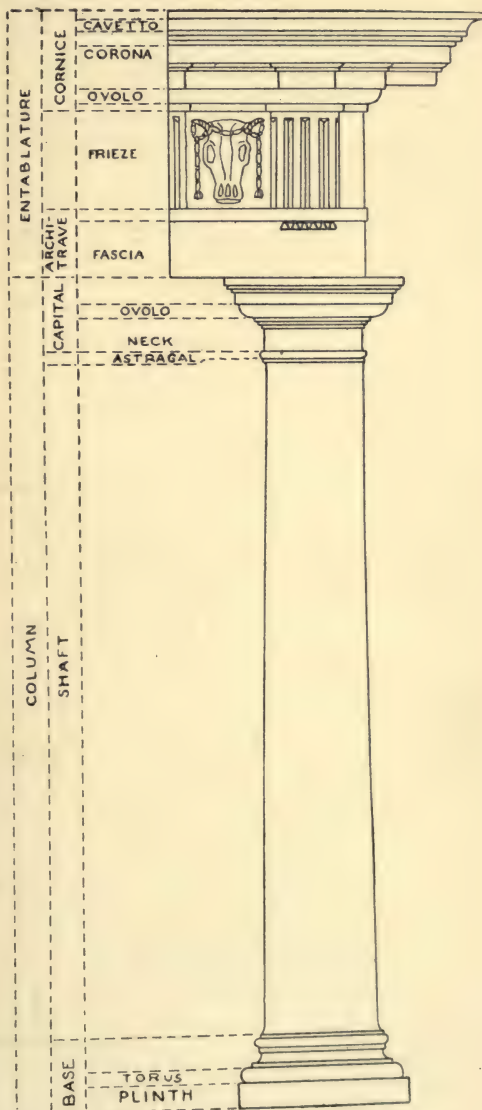
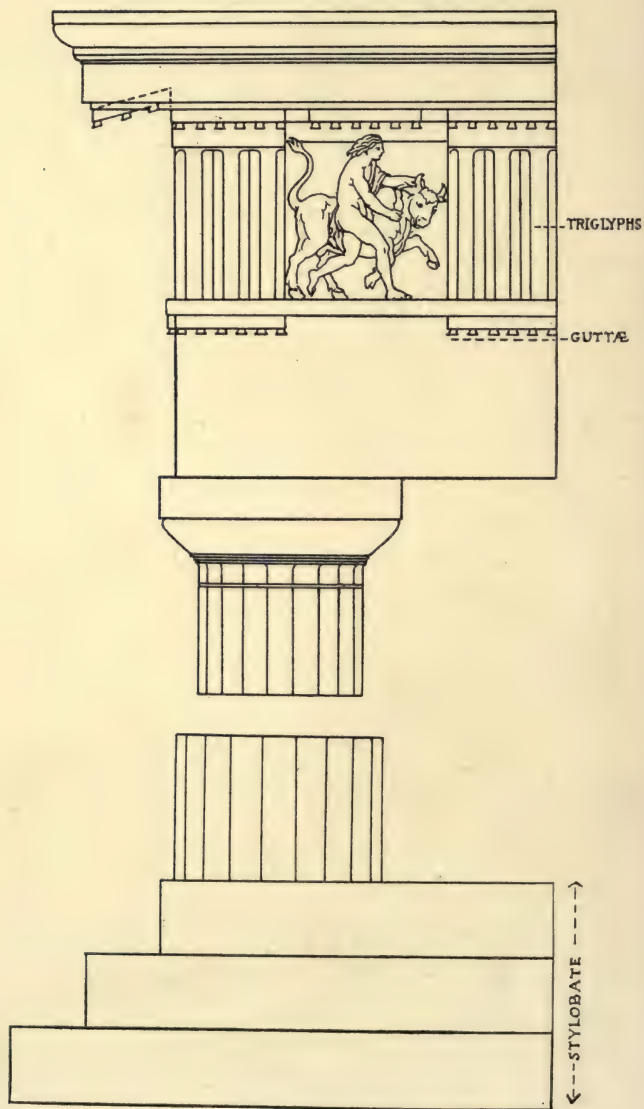
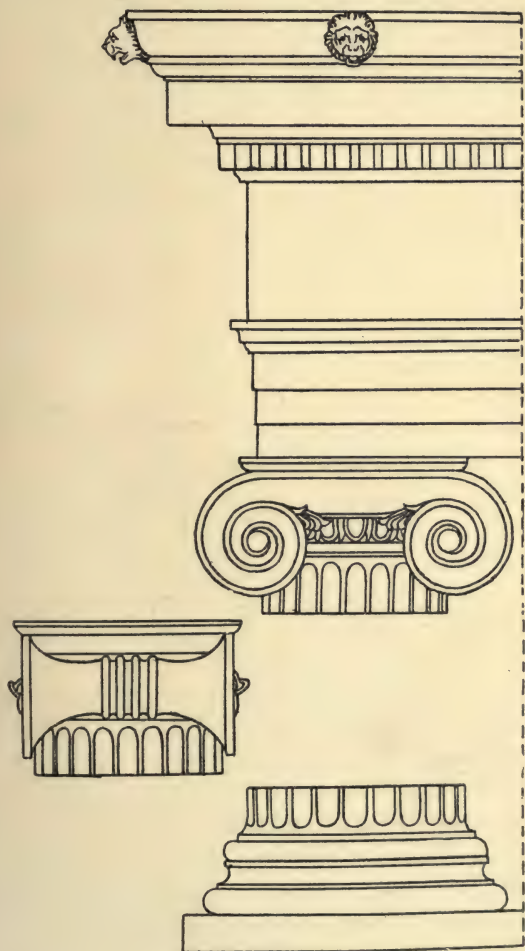


DIAGRAM SHOWING THE PROPORTIONS OF
AN ORDER.—THE ROMAN DORIC



THE DORIC ORDER.—TEMPLE OF THESEUS, ATHENS.

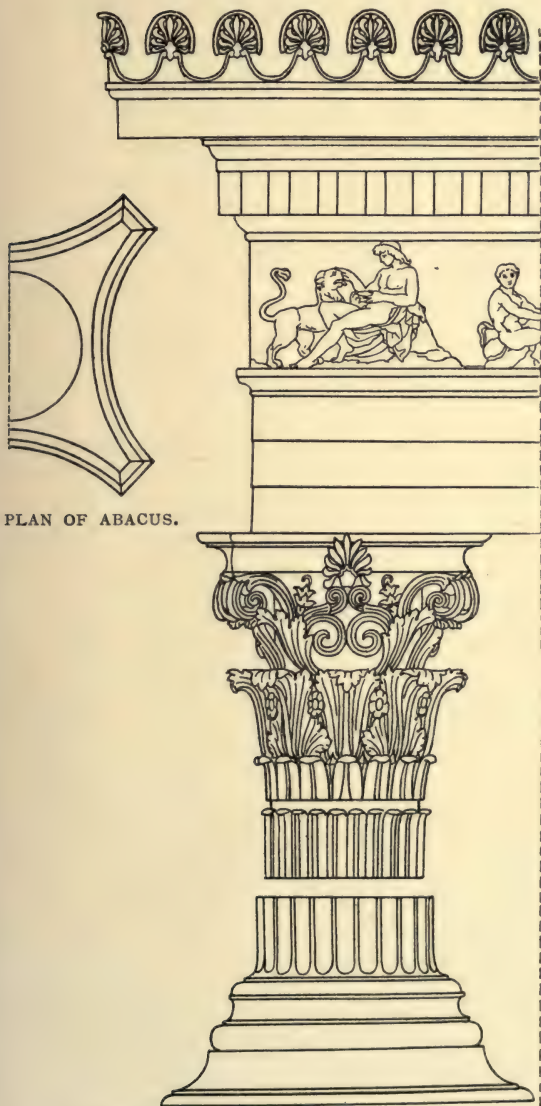


THE IONIC ORDER AT ELEUSIS.

Doric, the mouldings more profusely enriched, sculptured ornament taking the place of the colour decorations used in the Doric. Another variation is that the column has a base, consisting of an upper and lower torus with a scotia between; the base, usually, has no plinth. The architrave is plain, usually in three divisions or fascias. The frieze is either quite plain or decorated with sculptured reliefs, but has no triglyphs. The crowning member of the cornice is usually a cyma-recta with a narrow fillet. The principal buildings of this order are the Erechtheum at Athens, B.C. 479, and the Temple of Diana at Ephesus, B.C. 330.

THE CORINTHIAN.—This was a later order, lighter in character and much more ornate than the two preceding. The earliest complete example of this order is the Choragic Monument of Lysicrates at Athens, B.C. 335. The capital of this order, which is its most distinctive feature, may be said to consist of three parts, a row of sixteen plain water-leaves springing from the neck; above these a row of eight acanthus leaves, with a flower between each pair of leaves, and from these acanthus leaves spring sheaths, which in their turn give out volutes to the centre of the bell and to each angle of the abacus. From the junction of the two upper and smaller volutes in the centre of the bell springs an anthemium, which reaches to the top of the abacus, and serves to unite the abacus with the bell of the capital. The abacus differs materially from the two preceding orders in that it is moulded and hollowed out on each of its four faces. (See Illustration of plan.)

The shaft is fluted, as in the Ionic, the flutes terminating in a series of narrow water-leaves at the neck. The base consists of a torus with fillet, a cavetto and fillet and a smaller torus with fillet. It has also the addition of a larger cavetto with fillet and small torus underneath.

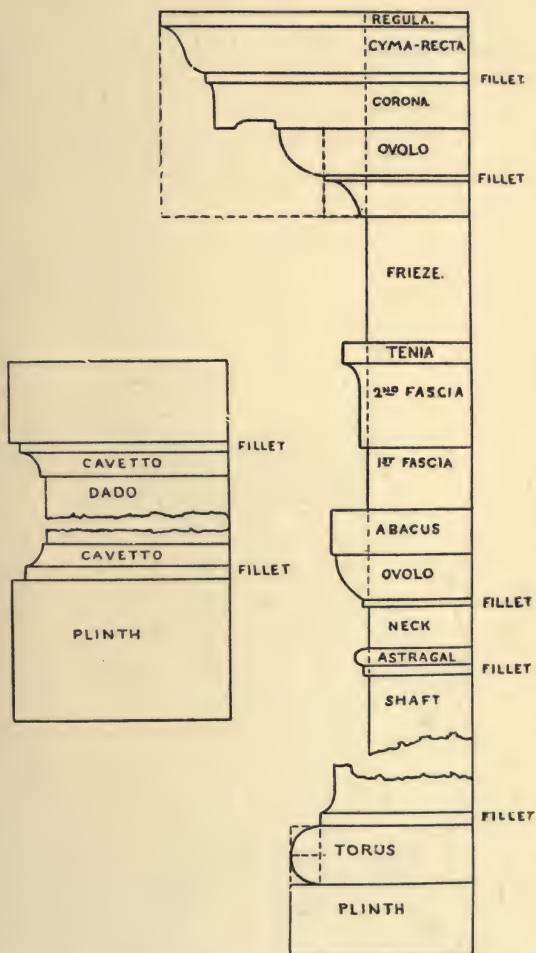


THE CORINTHIAN ORDER OF THE CHORAGIC MONUMENT
OF LYSICRATES.

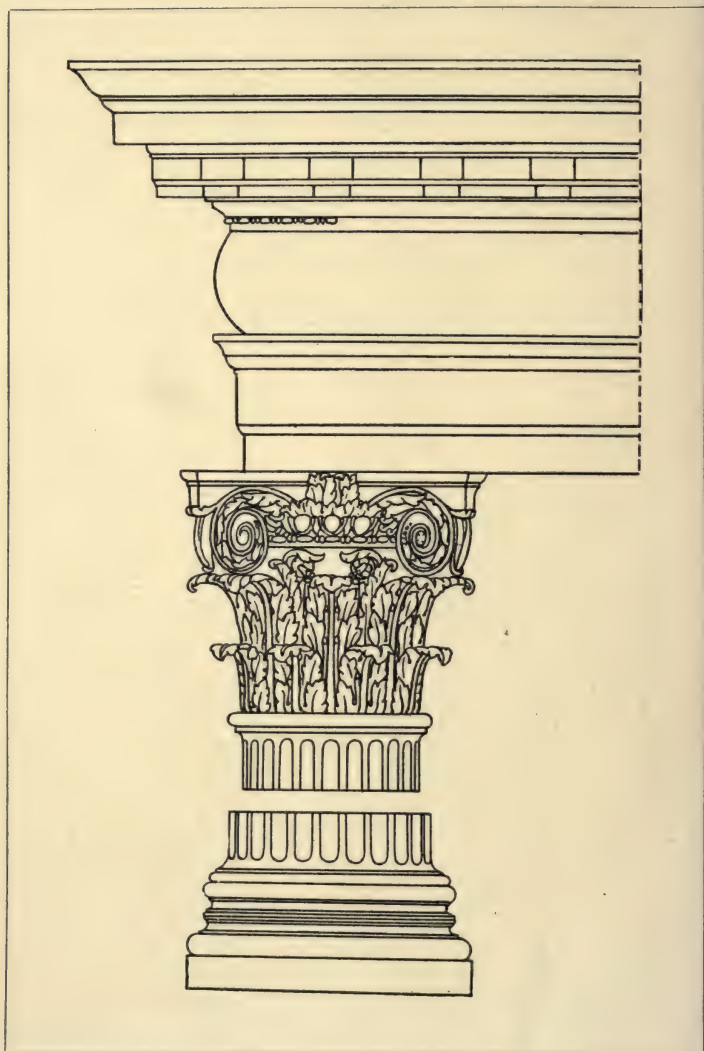
THE TUSCAN.—This is the least ornate of the Roman orders, the mouldings being perfectly plain. It is a modification of the Doric. The abacus is perfectly square, with an ovolo instead of the Greek echinus, a short neck, with an astragal and fillet below. The architrave has in the example given, which is by Palladio (no ancient example now exists), a first and second fascia, with *tænia* above, a perfectly plain frieze, and the cornice is made up of a cavetto and fillet, an ovolo, corona and fillet, with a *cyma-recta* as crowning member. The shaft of the column is also plain, and is never fluted. The base consists of a torus and fillet and a plinth. The pedestal consists of a plinth with fillet and cavetto, the dado perfectly plain, with cavetto, fillet and plat-band.

THE COMPOSITE.—The capital of this order is a compromise between the Greek Ionic and the Roman Corinthian, with none of the constructive qualities of the latter order. From the centre of the capital runs two volutes similar to the Ionic, but profusely decorated with foliage. From the junction of the two volutes springs a flower which runs to the top of the abacus. Immediately below the abacus is the decorated ovolo and bead moulding. The abacus takes the concave form of the Corinthian. The bell of the capital is decorated with two tiers of *acanthus* leaves, from which springs spiral foliation filling up the intervening space between the leaves and the decorated mouldings above. The whole order is overladen with ornament possessing none of the refinement or reticence of Greek work.

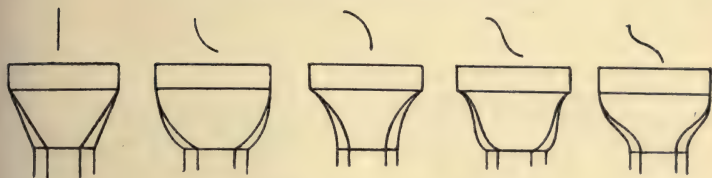
The above is a brief survey of the leading characteristics of the classic orders. These orders have been in use with various modifications down to the present time.



THE TUSCAN ORDER ACCORDING TO PALLADIO.



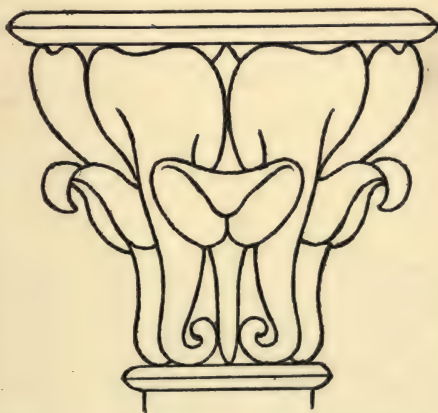
THE COMPOSITE ORDER.



LEADING TYPES OF CAPITALS.

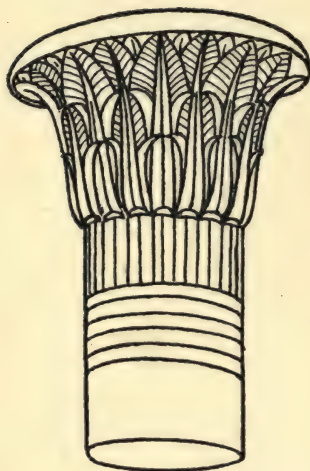
CAPITALS.

The chief characteristic of the capital is its stability, and its function is to support and transmit the weight of the entablature to the column. It has always been regarded as the most distinctive feature of the order or style, and the ingenuity of architects has always been directed to the harmonious proportion and enrichment of its parts. The leading types of the profiles of capitals may be said to take the form of the straight line, and the curves represented by the ovolo, the cavetto, the cyma - recta and cyma-reversa.



CAPITAL SUGGESTED BY THE FLOWER OF THE COLUMBINE.

The quality of *stability* above referred to is well illustrated in Egyptian capitals. Their general contour, however, presents little variation, and the ornamental *motifs* are almost in every instance drawn from the lotus

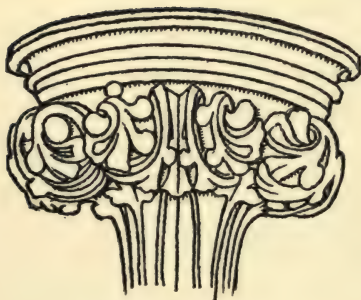


PAPYRUS.



LOTUS.

EGYPTIAN CAPITALS.

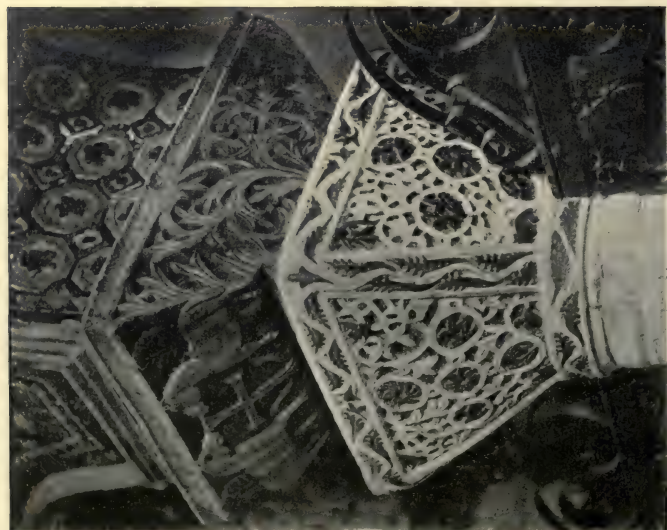


EARLY ENGLISH.



DECORATED

GOTHIC CAPITALS.



BYZANTINE CAPITALS FROM SAN VITALE, RAVENNA.



CARVED WOOD CAPITAL—ITALIAN 13TH CENTURY. SOUTH KENSINGTON MUSEUM.

and papyrus plants, together with the feathers, and yet these few types were varied almost indefinitely. On looking at these, and the great variety of Byzantine and other caps which are suggested by the study of natural forms, it seems a little surprising that modern architects should cling so tenaciously to the five orders or to a few types of Gothic caps.

The capital of the carved wood column (13th century Italian), which is illustrated, is one of four in the South Kensington Museum. The columns were originally the supports of an organ, and were coloured and probably also gilt in parts. The design of the four capitals

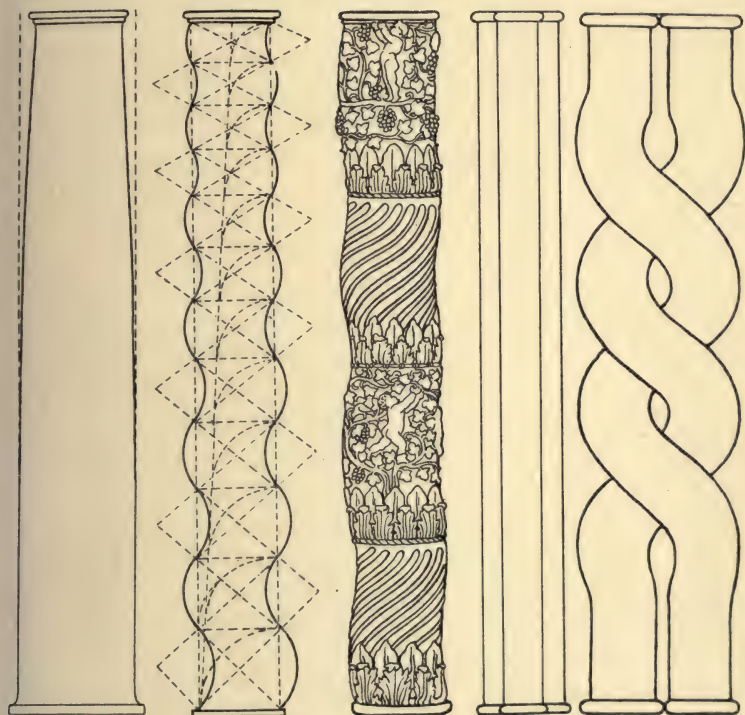
vary, and the different *faces* of the capital also vary. The ornament is continued in each instance below the necking. The example illustrated represents two peacocks as the emblem of the Resurrection, in the upper portion, or in the capital proper, and two doves with a vine below the necking. It is an interesting example of the treatment of wood, the feathering on the bodies of the birds being produced by simple gouges of the carving tool. The shafts of the columns, and the background of the ornament of the capital were painted red, and the ornament a light blue. The colour has now almost all disappeared.

COLUMNS.

The shafts of columns may be treated in an infinite variety of ways. A few leading types are given. The first is the plain unfluted Renaissance shaft, showing the degree of its *entasis* or rounding. The second is a plain spiral, with its construction lines. The third is from Raphael's cartoon of the "Beautiful Gate," which is a very effective treatment, the figured ornament contrasting happily with the alternated spiral flutes. A good modern instance of a similar treatment may be seen in the terra-cotta columns in front of the Science Schools, South Kensington, by Godfrey Sykes, in which the *drums* are composed entirely of figures with contrasted ornament between. The fourth example given is a plain Gothic shaft. The fifth is a twisted or knotted pillar from the Cathedral of Ferrara.

In the early Italian Gothic, mosaic inlay was largely used for spiral columns and pillars, pilasters, &c. The Monastery Court of St. John Lateran, Rome, may be cited as an instance.

In the classic styles the plain or plain-fluted shafts of the columns contrasts happily with the richness of the



THE TREATMENT OF THE SHAFT.

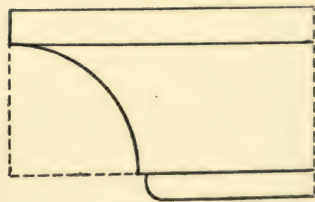
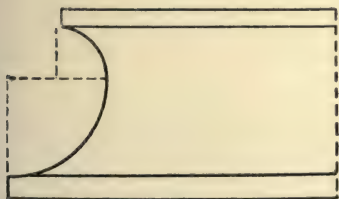
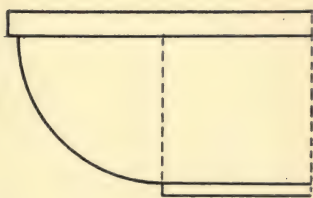
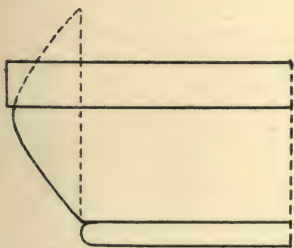
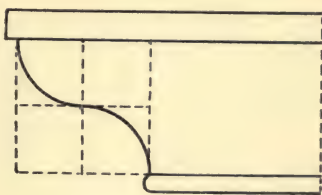
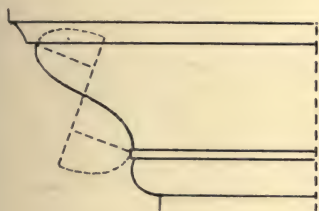
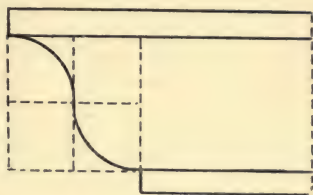
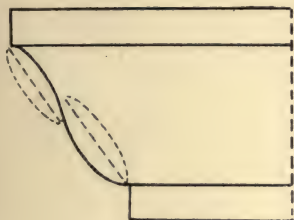
capital, and the rest of the ornamentation of the building. Speaking broadly, however, the character of the material generally determines the treatment, a beautifully figured marble, for instance, would be worked plain, and not cut up by ornamentation.

The white marble pillars of the Wellington Monument in St. Paul's, by Alfred Stevens, are worked with an all-over pattern of naturalistic oak leaves. The treatment is scarcely consonant, however, with the dignity of the rest of the design.

GREEK AND ROMAN MOULDINGS.

The projection of the Greek echinus, so called on account of its resemblance to the shell of the sea-urchin or echinus, is two-thirds that of the height, measuring to its highest prominence. The projection of the Roman ovolo is exactly the same as the height, the moulding being a quarter of a circle. The contour of the Greek echinus is more elegant and refined, and of necessity presents a greater degree of variety than that of the ovolo, which is struck by a compass. The echinus is therefore necessarily more beautiful.

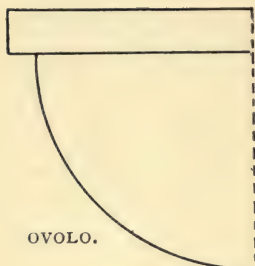
The contour of the Greek ogee or cyma-reversa represents the segment of two ellipses; a longer and narrower one for the upper portion of the member and a slightly larger and broader one for the lower portion. Both the upper and lower portions of the Roman ogee represent the quarter of a circle struck by the compass. The Greek cyma-recta is not the exact reverse of the ogee or cyma-reversa as is the Roman, but represents the segment of two longer and narrower ellipses, the lower portion of the member being the larger, as in the ogee. The upper curve of the scotia represents the



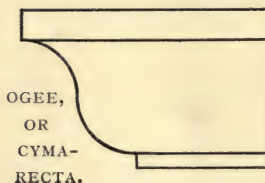
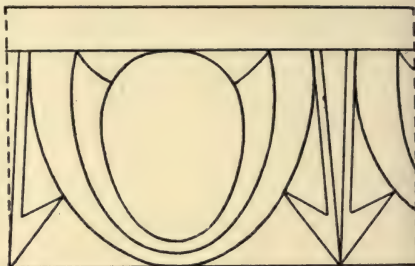
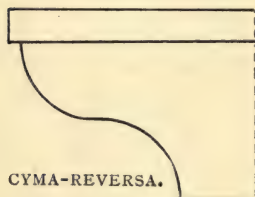
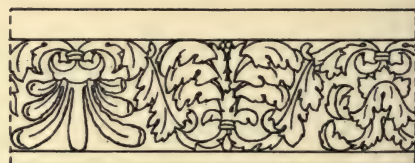
GREEK.

ROMAN.

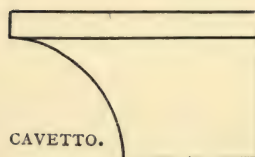
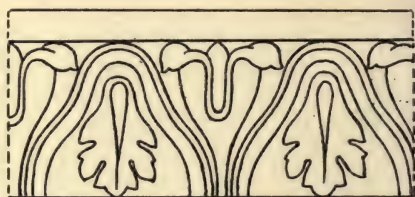
PROFILES OF GREEK AND ROMAN MOULDINGS.



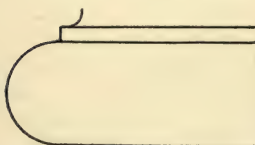
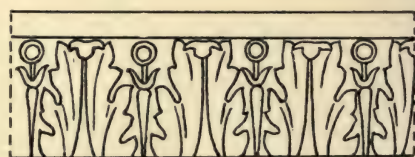
OVOLO.

OGEE,
OR
CYMA-
RECTA.

CYMA-REVERSA.



CAVETTO.

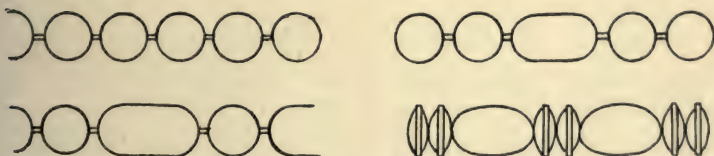
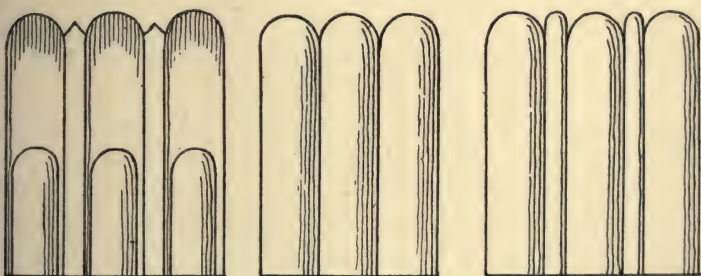
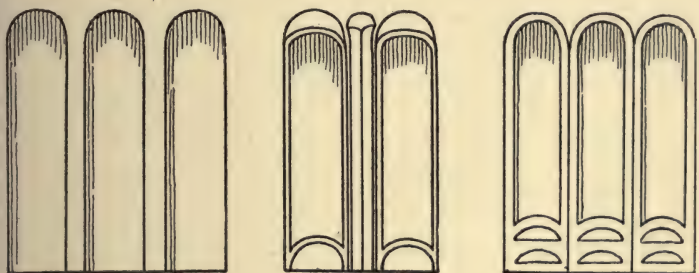


TORUS.



ROMAN MOULDINGS WITH THEIR ORNAMENTATION.

quarter of a small circle, the lower curve the quarter of a larger circle. The cavetto is a Roman moulding, and



FLUTES, REEDS AND BEADS.

represents a quarter of a circle. It is, in fact, the ovolo *reversed*. The torus is a semicircle in each instance.

The principal rule to be observed in the ornamentation of mouldings is that the leading lines of the ornament of a moulding should as near as possible take the shape of the profile of the moulding itself. Straight lines, reeds and frets, are proper for the ornamentation of flat surfaces; curved lines for the ornamentation of curved surfaces. The merest glance at the examples given will be sufficient to convince anyone of the reasonableness of this rule; how appropriate, for instance, is the guilloche for the ornamentation of such a moulding as the torus. Reeded ornament is the reverse of fluted, the former being convex and the latter hollowed out or concave in surface.

PILASTERS.

A pilaster is a flattened column, and may be considered as part of a square column which projects out of a wall. The ground is an essentially architectural element—which element should never be lost sight of, as pilasters are always supports. The degree of relief is invariably low, and generally speaking should never exceed the depth of the sunk moulding round the panel. While the silhouette of the ornament should be clear in every instance, the planes should be as varied as possible, the relief gradually leading up from the ground to its highest point, which is generally in the middle.

Uniformity of character is desirable, and the introduction of too many incongruous elements is to be deprecated.

There are two systems of pilasters, the one springing up, and the other hanging down. In the designing of pilasters the first consideration is always the *leading lines*. In pilasters on the springing principle, the backbone is to be treated very slight, as straight lines are always conspicuous. Crosses are very useful in long distances and



1.



2.



3.



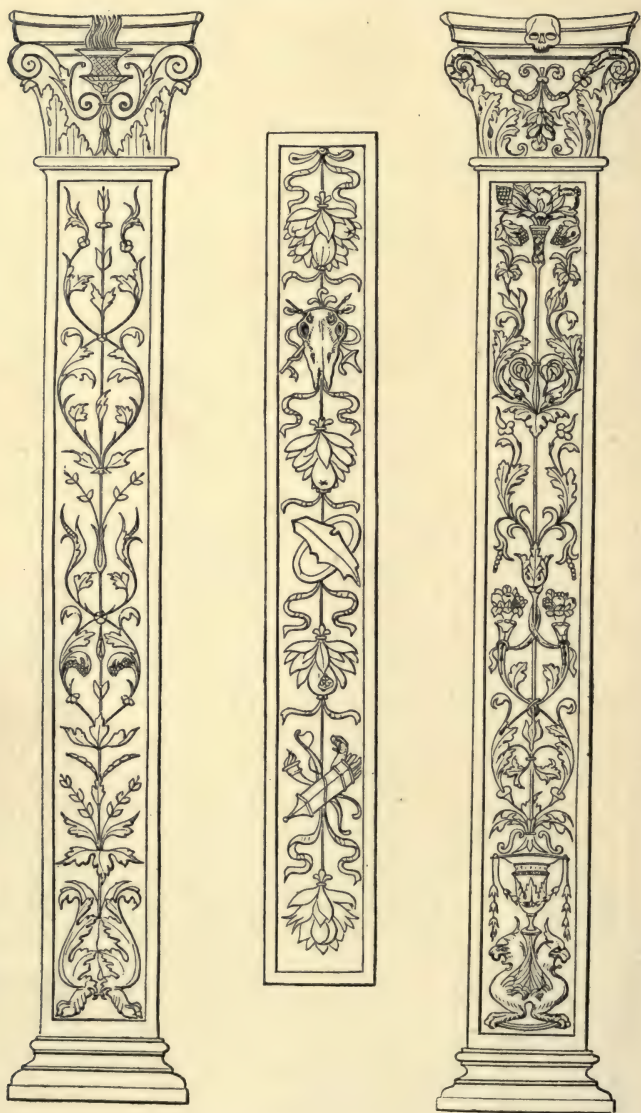
4.



5.

PILASTERS.

1. S. MARIA DEI MIRACOLI, VENICE. 2 AND 4, EREMITANI CHAPEL, PADUA. 3, MARBLE TABERNACLE, VICTORIA AND ALBERT MUSEUM. 5, PICCOLOMINI LIBRARY, SIENA.



PILASTERS FROM THE MONUMENT TO LOUIS XII., ST. DENIS. C. 1520.

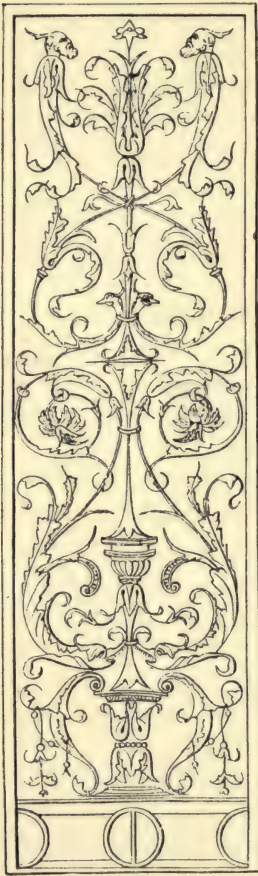
serve to break the monotony of the long line of backbone, also to strengthen the composition. They are usually pots, tazzas, masks, &c.

Pilasters on the hanging system are to be treated on the principle of lumps, or bosses, at pretty regular intervals, with lighter ornaments between. The bosses are generally composed of instruments, armour, fruit, and, in the later styles, bunches of flowers. The lighter ornaments are ribbons, &c., which serve to fill up the intervening spaces, and are in lower relief to the bosses.

The example given of the pilaster of the marble tabernacle in the Victoria and Albert Museum by Andrea Ferrucci *circa* 1440—1520, is an exception to the above rule, in that it is a series of bunches of fruit springing from a vase at the bottom. It is extremely effective.

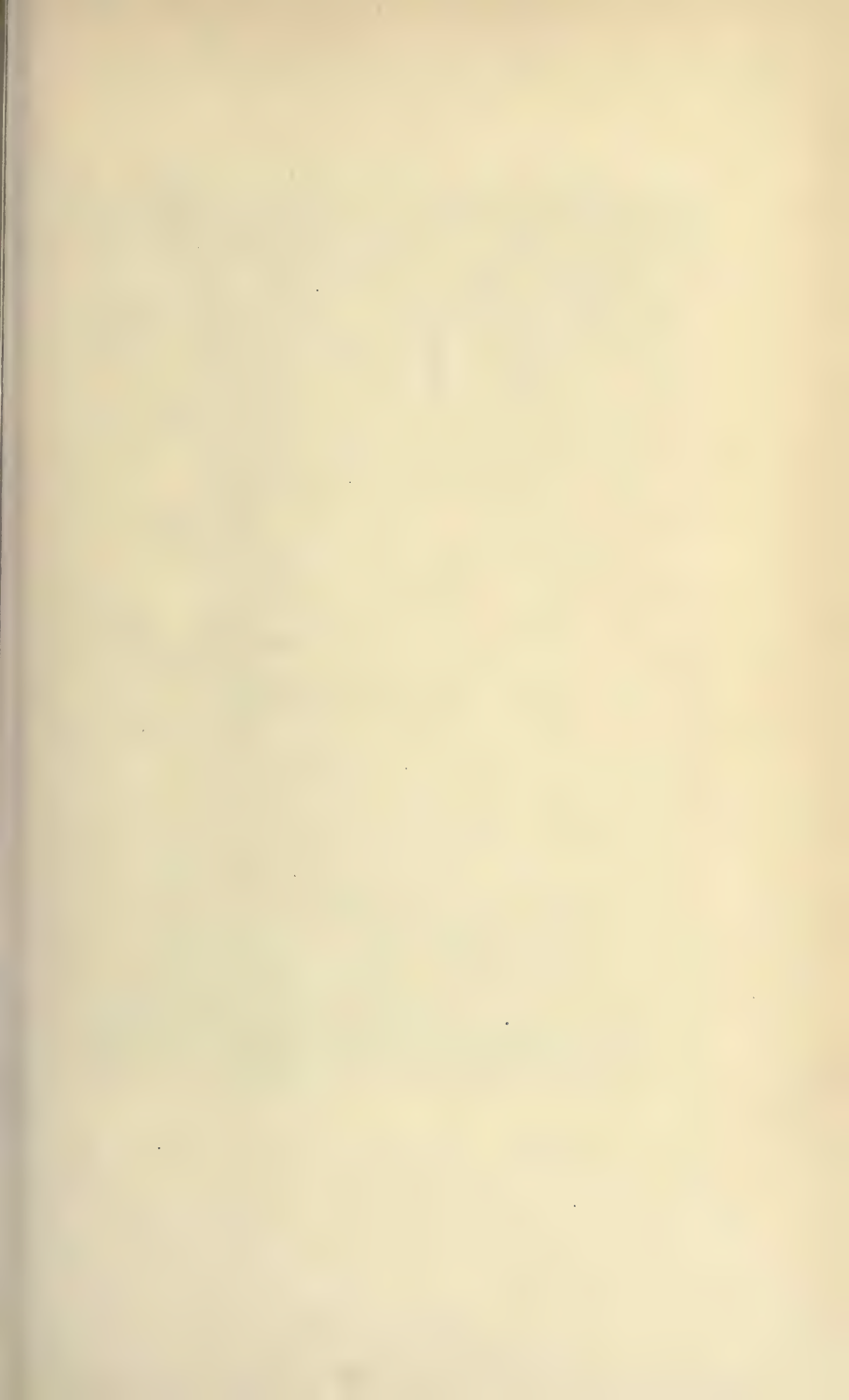
Caps of pilasters are squarer than the caps of columns, the base being broader, owing to the tapering of columns. The height of the cap is determined by the height of the pilasters: a short pilaster, a short cap; a long pilaster, a high cap.

In connection with the subject of pilasters, decorative painting of an architectural character should be studied. Architecture was the favourite subject for the backgrounds of decorative figure subjects, as it tended to raise the character of the composition, and gave an added dignity to it, besides harmonising well with the building in which the work happened to be. A painted architectural framework to the picture was also very common in the decoration of wall surfaces, and this architectural painting, and the ornament which enriched it, was often of a very high order. Mention may be made of the remarkable series of frescoes in the Eremitani Chapel at Padua, also the decoration of the Piccolomini Library at Siena, by



FROM CARVED OAK PANELS IN THE LOUVRE, PARIS.

Pinturicchio, in which the pilaster decoration is painted to imitate relief. In the latter instance, however, some of the pilasters have a coloured background or field, with the ornament in *grisaille*. (See Illustration, Fig. 5, page 37.)

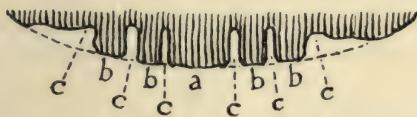
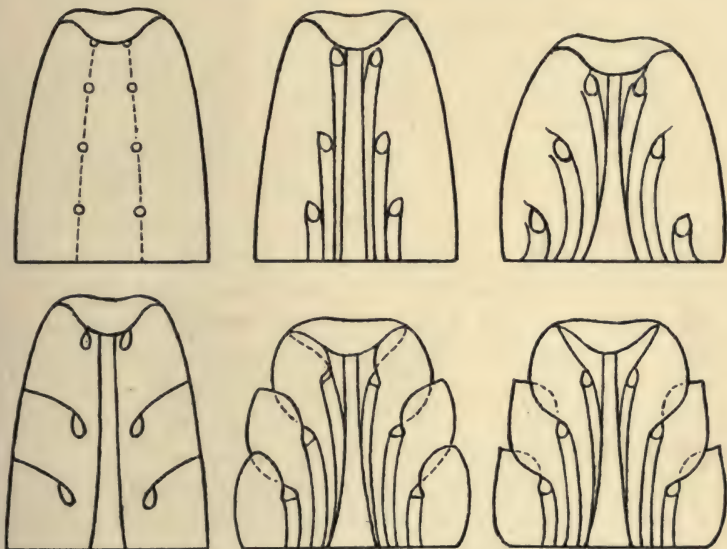




CORINTHIAN CAPITAL. FROM THE TEMPLE OF VESPASIAN, ROME.

THE ACANTHUS.

In considering the construction of the so-called acanthus leaf of the Roman Corinthian cap, it will be seen at once that the representation is far removed from the natural



THE SETTING OUT OF THE ACANTHUS LEAF OF THE ROMAN CORINTHIAN CAPITAL, WITH SECTION.

leaf. It differs in the principles of its construction and may be said to be an invention or creation of art. It differs in two ways; first, the ribs of the natural leaf entirely disappear, and their place is taken by the pipes

which descend from each eye; secondly, they do not radiate and spring from the central stalk as do the ribs of the natural leaf, but run parallel to it and radiate both upwards and downwards. In its stability, harmony and fitness to its purpose it is, however, in complete conformity with the *general* laws of natural form.

The first thing to be noticed after the general shape of the leaf, is its strong central stalk, tapering upwards from a broad base. The next thing is the position of the *eyes*, which are set at regular intervals, also tapering upwards, and following the contour of the leaf. These eyes are an important factor in all foliated ornament, as the edges serve to catch the light, and enclose pretty pieces of shadow, which give vivacity to the ornament. The next thing is the setting out of the pipes, and the character of these pipes depends upon the general character of the leaf, in fact they *determine* the character of the leaf.

The next thing to be done is to set out the general outline of the leaflets, starting from the eyes.

The foliation of the more severe styles, such as those of Mars Ultor, or Jupiter Stator at Rome, is known as the olive leaf variety, the lobes of the leaves assuming the pointed form of the olive leaf, and each lobe being hollowed out like a cup to throw a piece of shadow from its upper edge, and to catch a piece of contrasting light upon its lower. The bending over of the top of the leaf is for the same purpose; its projection is considerable, and serves to throw a rich piece of shadow on the capital, with a corresponding piece of high light on the edge of the leaf. The section diagram given shows the general shape of the surface of the leaf, the projection of its pipes, *b, b, b, b*, and the depth of the undercut channels between, *c, c, c*.

The acanthus leaf of the Corinthian cap naturally leads



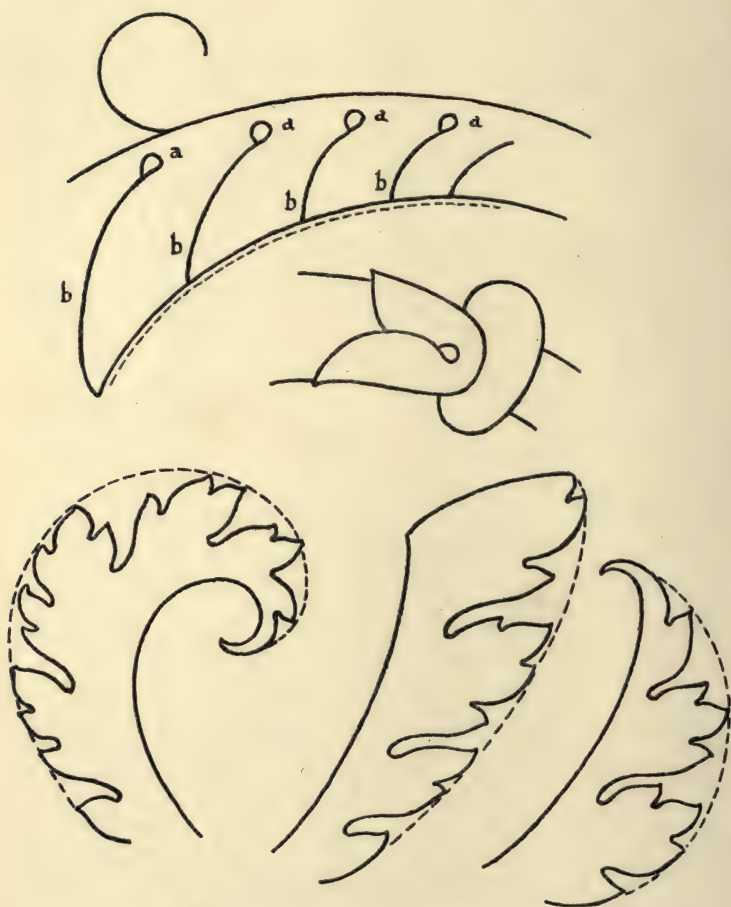
CHRYSANTHEMUM
LEAF.



SEAWEED.



THE NATURAL ACANTHUS LEAF.

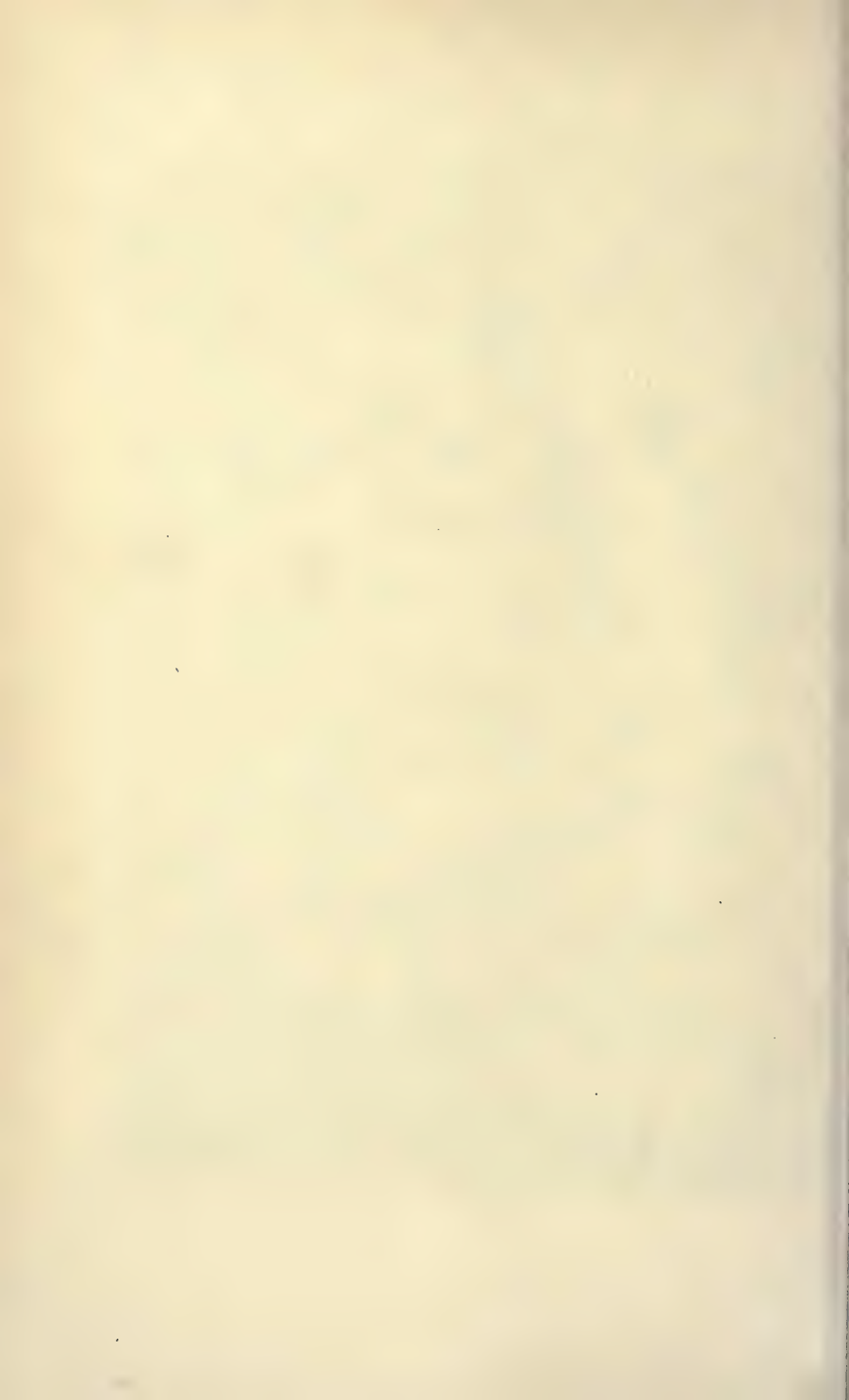


GRADATION IN ACANTHUS FOLIATION.

to the consideration of the comprehensive subject of acanthus leaf ornament, and the foliated Arabesques so common in cinque-cento decoration. The well-known



ROMAN SCROLL, FROM THE FORUM OF TRAJAN.



story given by Vitruvius of the origin of the Corinthian cap may be dismissed at once as a fable. As a matter of fact, almost any natural serrated leaf, such as the chrysanthemum, poppy and other leaves, will suggest the kind of foliation with which we are familiar in Roman and Renaissance ornament, while the bracts which encircle the buds of the hemlock, horned poppy and other plants suggest the *nests* which are indispensable to the continuity of ornamental growth. Common seaweed, too, will afford many suggestions of a freer foliated growth, such as is seen in the mantling of Gothic heraldry.

In considering the foliation of the Trajan scroll, which may be taken as a typical example of Roman ornament, the first principle which strikes one is the important law of *gradation*—indeed this is a general principle in all foliated ornament, and is in strict conformity with natural laws. Upon referring to the diagram, it will be seen that, although the eyes, *a, a, a, a*, are about equidistant, both the leaflets and the individual serrations are arranged in *progressive order*; and if we take the general mass of the leaf it becomes wider at the tip, as shown by the dotted lines. The edges, the general shape of which are shown in the diagram by the lines *b, b, b, b*, are very prominent and lap over the succeeding leaflet, which is cut away in order to give it prominence. The *nests* may be said to be double, and consist of a set of leaves which turn backwards, and an inner set springing from the nest proper, and wrapping round the stalk and leaflets.

The top or outside curve of the stalk is kept broad and simple in outline in order to emphasise the general curve of the scroll.

In foliated ornament generally, some leaves gradate upwards, some downwards, some culminate in the middle,

but in all, the serrations are arranged in progressive order, and conform to the same law, which is the general law of nature.

ARABESQUES.

Owen Jones speaks of the "fatal facility for manufacturing ornament which the use of the acanthus leaf engenders." The phrase is somewhat unfair, as the very essence of Italian Arabesque ornament is its spontaneity. The phrase may be applied with some show of reason to Holbein, who, although he may be said to have treated Arabesque in his drawings at Basle with more power than any individual artist, yet these drawings are a little thin in character, through being, as it were, "run off the reel;" but, on the other hand, Stevens, who is the only modern artist who has treated Italian ornament with any show of originality, or who has sounded any new note in Italian ornament, was over-fastidious, and it may seem paradoxical to say that his work suffered from being taken too seriously. His spandril was intended to be a perfect piece of ornament, and no doubt should have been, considering the power of the artist and the amount of care expended upon the work. Its bosses, however, are too equal, the ornament generally is too involved, and the work suffers from over-elaboration. No one familiar with the work of Mantegna would accuse him of possessing a "fatal facility," yet a good deal of his Arabesque ornament, the foliage at any rate, has much the same character as Holbein's.

Holbein produced a great quantity of Arabesque ornament and made designs for arms, jewellery, and even designed dresses for the ladies of Henry VIII.'s court. He designed Arabesque with great power and facility. The two examples given, which are free renderings in line from



HOLBEIN DRAWINGS, BASLE MUSEUM.

his Basle drawings, will serve to give a general idea of the character of these Arabesques. They are usually made up of swags, festoons, cartouches, heraldry, foliated ornament and cherubs, often as embellishments of an architectural setting. He introduced Arabesques freely in the backgrounds of his pictures, and occasionally indulged his fancy to its utmost limit, as in the case of the picture of the Madonna and Child at Basle (an early work), which has a painted architectural framework with pilasters in which cherubs are starting out from the ornament across the limits of the border of the pilaster, and offering gifts, tablets, &c., to the subject of the picture.

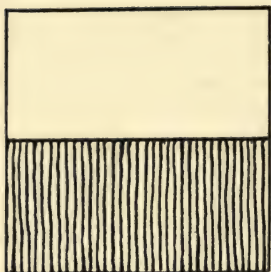
The decorations in the Loggia of the Vatican are amongst the most famous examples of Arabesque design. They were executed under the direction of Raphael by the most able of his numerous pupils, Giovanni da Udine, Perino del Vaga, Giulio Romano, Francesco Penni, and others. These Arabesques are in great part founded on, and to some extent intended to rival, the "Grottesque" decoration of the ancients, and consist of foliated scrollwork, in which naturalistic animals and birds are introduced, pilaster decoration with light architectural arrangements, terminal figures, festoons, cameos, &c., showing abundant fancy in their arrangement, great skill in their execution, but unfortunately little regard to proportion and scale, as will be at once seen by referring to the example illustrated (page 129). In this comparatively small but elaborate panel every single object introduced is of a different scale. The two boys at the top of the panel are larger in scale than the satyrs in the centre, who in their turn are larger than the female terminals below. Four cameos are introduced, each of a different scale, and the two terminals at the top of the panel present still another variation.

It is not always possible, and sometimes not even desirable, to keep to one uniform scale in a scheme of decoration, but it may be stated, in connection with this, that Sir Edward Poynter at South Kensington laid down a general rule or law that it was not desirable to introduce more than *two* variations of scale in a decorative work.

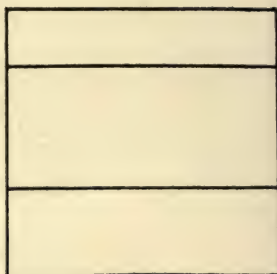
TREATMENT OF WALL SURFACES.

The various means with which a wall may be covered, treated, or decorated, are :— marble with inlay, of various colours and patterns; fresco or distemper; tapestry; wood-panelling and inlay; wood-panelling in conjunction with fresco; wood-panelling in conjunction with tapestry; tiles; and bricks. A complete scheme of marble is unsuitable to this climate, besides being extremely costly, but if this formed the general decorative scheme, nothing but metal, brass or bronze, would be of sufficient dignity to be used for the doors, &c., with mosaic for the floors. Marble may, however, form part of the decorative scheme, for pillars, pilasters, dadoes, &c.; in this event the introduction of wood and other substances would not be felt an anachronism.

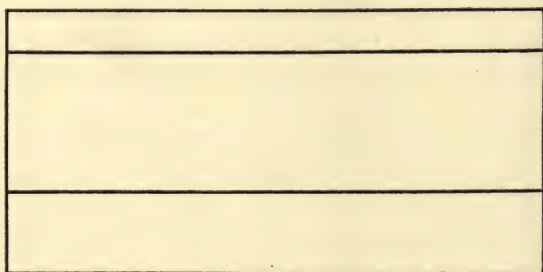
In the setting out of wall spaces for decoration, the first consideration is that of *proportion*. No precise rules can be laid down except those general rules which are common to all design. For as Unity and Variety constitute the two chief elements of Beauty, the highest Beauty may be said to be that which offers the greatest degree of Variety compatible with Unity. It is, however, very much a matter of individual feeling and power, as exceptions may be cited to almost every rule which can be laid down; for instance, if a rectangular wall surface has to be divided up



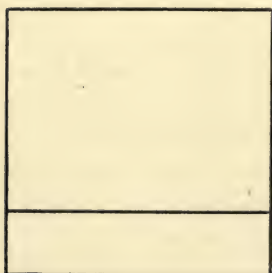
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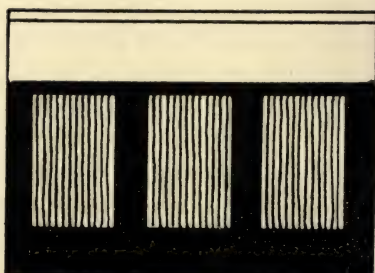
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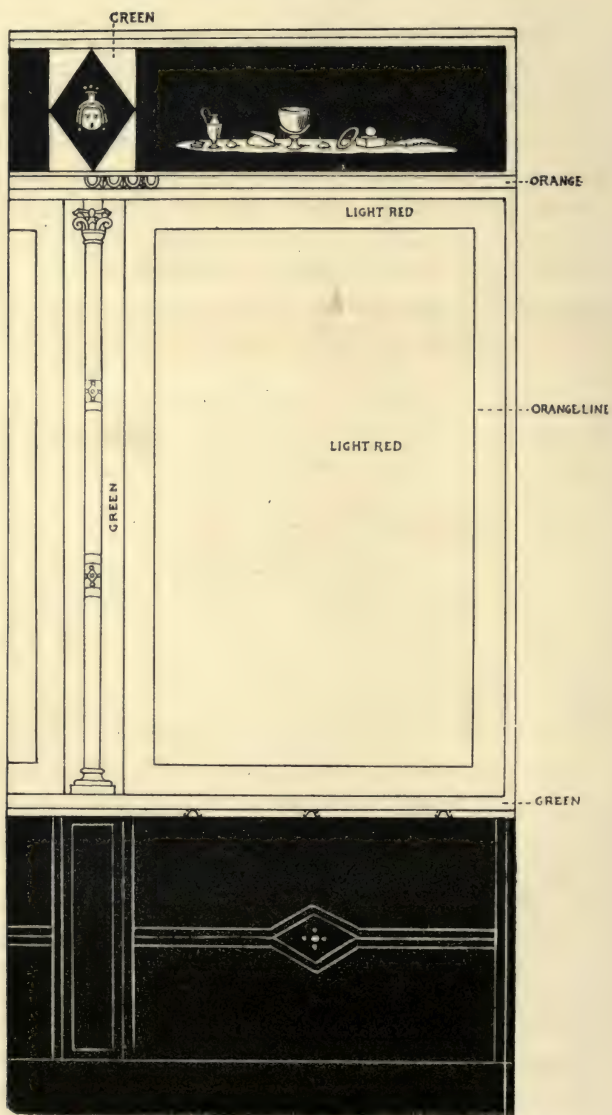
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PROPORTIONS OF WALL SPACINGS

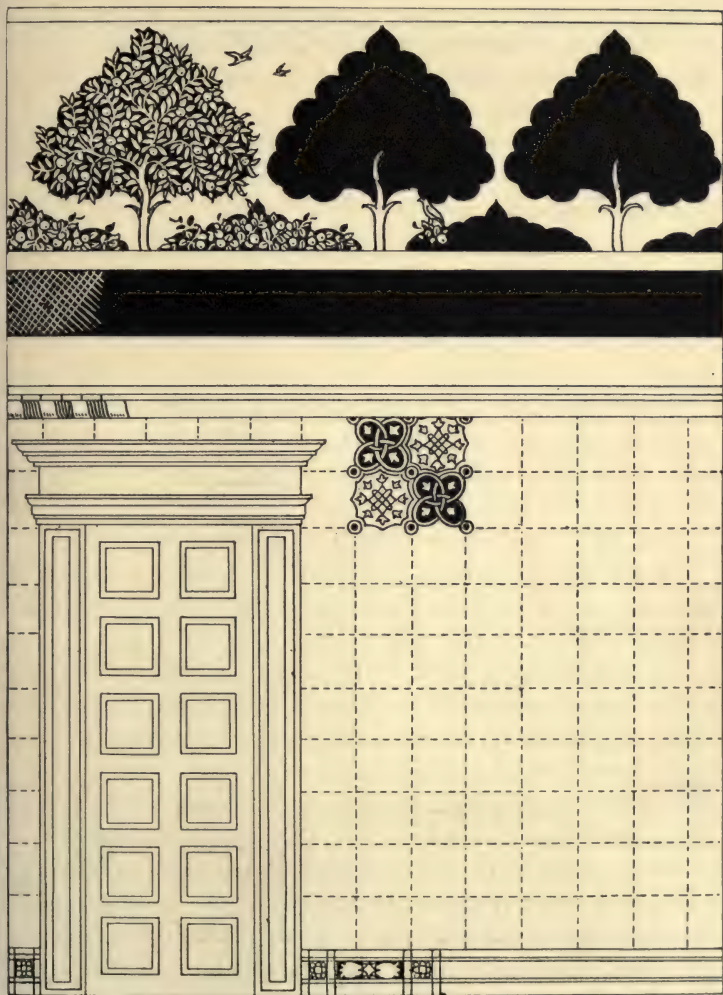
for decoration, an equal division of the space would tend to monotony, and therefore would not be desirable, but this was, as a matter of fact, done in the famous "Paradiso" of Isabella D'Este, at Mantua. But the room was made the occasion for Mantegna's paintings, which are so distinctive in themselves that every other consideration seems secondary. The walls of a room are generally divided into the three parts, of frieze, dado, and the intervening space between, which may be called for present purposes the field. Very much, however, depends upon the shape of the wall itself, whether it be a square or oblong. If a square, a good proportion in the setting out would be, for the dado one-third, and for the frieze one-fifth of the whole height (Fig. 2). For an oblong, the dimensions of frieze and dado would be slightly smaller, in each case the space would be divided unequally, giving the larger dimension to the field (Fig. 3). If important figure decoration is intended, the three dimensions would be discarded, and the wall divided into two unequal spaces, as is the case of Benozzo Gozzoli's frescoes in the Riccardi Chapel at Florence (Fig. 4).

In the illustration given from the Machiavelli Palace at Florence, which is a charming decorative scheme, the frieze with its several borders amounts to about two and a third of the whole height, the dado being dispensed with, unless the narrow border at the bottom can be considered as a dado. In this example the general colour scheme is low in tone, the frieze has a light red background, with olive green foliage thrown into relief by a dark grey ornamental form behind. The trellis border is dark grey, and the diapered pattern on the wall alternate bands of red, blue, and green.

Pompeian wall decorations show much skill and fancy in their general arrangement. The decorative scheme



WALL DECORATION, FROM ZAHN'S "POMPEII."

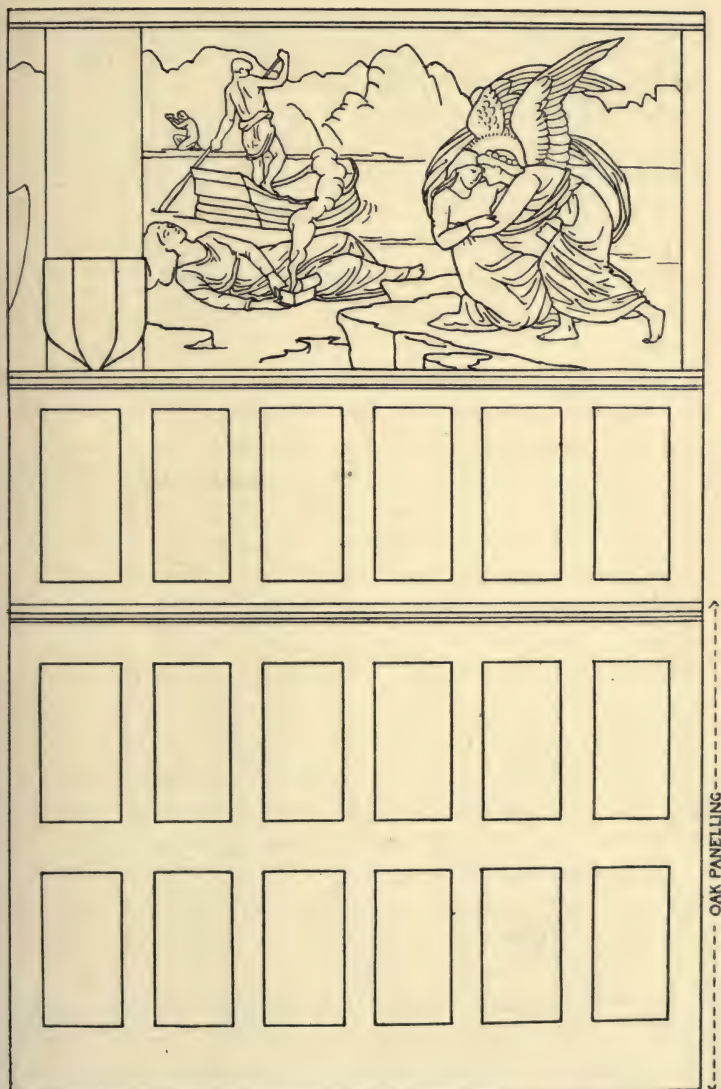


WALL DECORATION IN THE MACHIAVELLI PALACE, FLORENCE.

usually consists of a dado about one-sixth of the whole height, upon which are placed broad pilasters dividing the wall into three or more panels, and surmounted by a frieze of varying width.

In the best examples there is a gradation of colour *downwards*, from black in the dado to various shades of Venetian red, blue, and yellow in the panels, to yellow or white in the frieze (Fig. 5, page 50). Figures and light fanciful architecture are freely introduced, the figures painted in a more or less naturalistic manner, and all objects depicted are heightened with a warm shade of brown. These decorations are always painted in fresco or distemper, and are executed with a lightness and grace of touch which is impossible to convey in any reproduction. For fuller information respecting these decorations the reader is referred to Zahn's exhaustive work on "Pompeii," which was published about 1840.

In the decorations at the Earl of Carlisle's house in Kensington, of which a diagram of a portion is given, the frieze, which was painted by Sir Edward Burne-Jones, occupies about one-third of the whole height; for the rest of the space, two-thirds is occupied by oak panelling. The frieze is painted on canvas and applied or cemented to the walls by means of a mixture of white lead and oil, which is laid plentifully on the back of the canvas, and the painting pressed down with a cloth. This application of canvas to the decoration of wall surfaces has become a modern habit, and while it cannot be said to be so satisfactory in principle as actual wall painting, it offers certain advantages and conveniences. In the case of the great series of mural paintings in the Manchester Town Hall by Ford Madox-Brown, seven of the series were painted on the wall itself, by the process of spirit fresco known as the



WALL DECORATION IN THE EARL OF CARLISLE'S HOUSE, KENSINGTON.

P.D.

E

Gambier-Parry process, the remaining five were painted in the same medium on a prepared canvas, which gave the texture of the wall surface. No doubt motives of convenience induced this change of procedure. The painter was in advancing years, and the discomforts attendant upon working on a scaffold in a badly lighted hall in a dark and smoky city made the change necessary.

The paintings occupy the spaces between the windows, and there is an oak dado round the hall of a hard, cast-iron character which often excited the ire of the painter.

Almost within present recollection, and at the period of the very lowest ebb of the arts, it became the custom to line and cover the walls of a room with *paper*, and we have become so inured to it, through constant habit and familiarity, that we do not perceive its triviality. Everything depends, however, upon the circumstance of what we have to put or hang upon the walls. If any works of art of a delicate character are intended to be placed there, the recurring pattern of a wall paper, unless it be very unobtrusive, is disturbing, and means death to the said works of art. The practice of papering has, however, become so general, that the wall paper must be accepted as an accomplished fact, to be duly taken into consideration, and it must be admitted that, in the present state of the decorative arts, the wall paper possesses some advantages in the matter of convenience.

WALL PAPERS.—An ordinary English wall paper is printed upon paper 22 inches wide, in lengths of 12 yards, the size of the actual printing being 21 inches, to allow for half an inch on either side for the block register, and also as a protection to the edges of the roll, one side being trimmed off by the paperhanger. The usual size of a wall

$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$
$\frac{1}{2}$	1	$\frac{1}{2}$
$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$

SIDE.

	$\frac{1}{2}$	
$\frac{1}{2}$	1	$\frac{1}{2}$
$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$

DROP.

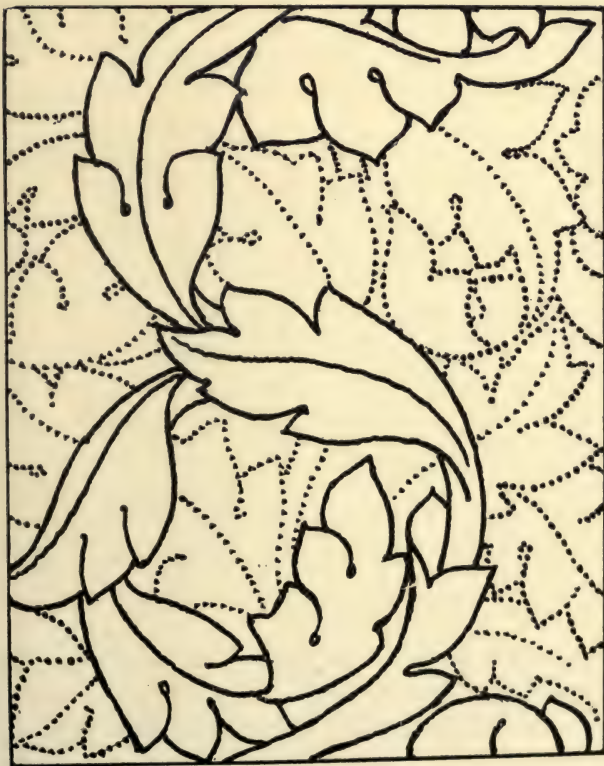
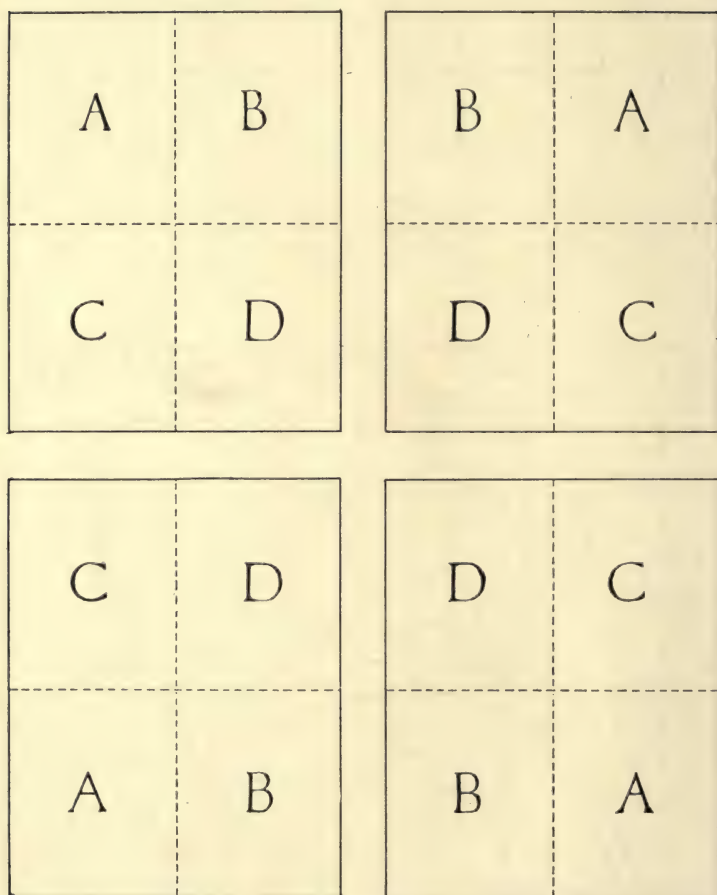


DIAGRAM SHOWING GENERAL SETTING OUT OF AN
ALL-OVER PATTERN BY WILLIAM MORRIS.



METHOD OF PROVING A PATTERN.

paper design is 21 by 21 inches. Wall papers are printed from engraved or cut wood blocks, either from rollers by a machine, or flat by hand. Each colour requires a separate



A DESIGN BY WILLIAM MORRIS.

printing from a separate block. Any gradation of tone is arrived at by means of lines or dots.

In designing for wall papers a small sketch is first made

to scale, and the first thing to do is to settle the principal *masses* of the designs, and the leading lines. The chief technical difficulty in wall paper designs is in the *repeats*. Designers usually start with a paper large enough to show the half of a repeat all round. (See Diagram, page 57.)

If a pattern of more pronounced leading features be intended it is all the more necessary to settle the leading shapes and masses of colour in the first instance. If it is based on floral form the disposition of the flowers would naturally be one of the first considerations.

The most usual way of proving the repeats and the joints of the design is to cut the design into four equal parts and transpose them. (See Diagram.) The lines of the design can by this means be easily made to fit, and, moreover, the designer can form a better idea of how the pattern will look on a wall.

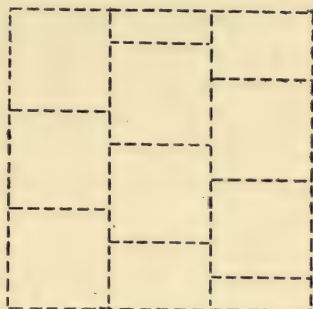
Designs are usually built upon either the square, the oblong or the diamond, and these shapes contain the unit of the design. In the illustration given it is an oblong.

The repetition of many wall paper designs is based upon what is known as *the drop*. This is a system by which, without increasing the area of the design, the same object does not repeat in the same line until the actual design is twice repeated. The paperhanger, instead of hanging the second piece level with the first, allows it to drop one-half, one-third, or one-sixth of the depth of the design, according to the intentions of the designer.

If the design drops one-half, the design becomes level or rights itself in the third piece ; if one-third, the design rights itself in the fourth piece ; if one-sixth, the design rights itself in the seventh piece. The half drop is, however, the most usual.



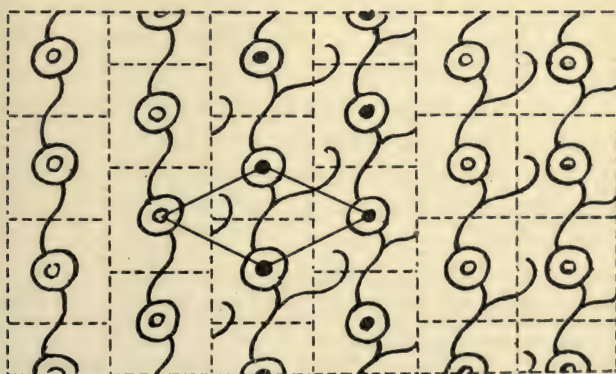
ONE-HALF DROP.



ONE-THIRD DROP.



ONE-SIXTH DROP.



ONE-THIRD DROP.

LEVEL.

THE DROP REPEAT.

In designing for wall papers, as for other arts, the method of production and the limitations of the material must determine the character of the work. Much gradation of tone or naturalistic effect is to be avoided, and the thing to do is to go for those effects or qualities which the material and method is best able to produce.

For a fuller elucidation of the subject the reader is referred to the admirable books by Mr. Lewis Day on the evolution of pattern.

GLAZED TILES AND BRICKS.—Glazed tiles and bricks have been employed from a very early period for both interior and exterior decoration. Fragments have been found in the ruins of the most ancient cities, and the remarkable Frieze of Archers in coloured and glazed bricks, from the Palace of Susa, unearthed a few years ago, a reproduction of which is to be seen in the South Kensington Museum, shows to what extent this art was carried by the early Persians. Wall tiles are common to all the countries of the East, and the mosques of Persia and the important cities of Syria are covered with ornamental tiles of beautiful workmanship, both flat and in relief. The art was carried by the Arabs to Cairo, Spain, the Island of Majorca, and from thence into Italy. Persian tiles are characterised by great freshness of design of a semi-naturalistic character and a beautiful quality of colour, the prevailing colours being a rich blue, olive green, a beautiful turquoise made from copper, and a brilliant red.

Dutch tiles have a quality peculiarly their own; they are usually decorated with figures, landscapes, or ornament, in a blue made from cobalt.

The tile of modern commerce is made from powdered

clay compressed by hydraulic pressure, in sizes varying from 4, 6 to 8 inches square.

TREATMENT OF ROOFS AND CEILINGS.

The subject of roofs and ceilings covers an enormous area and would require not one, but many volumes, to do it justice. Perhaps it will be well for convenience to divide the subject into two sections, namely, those in which the ornament is part of the structure, as wood and stone, and those in which the ornamentation is superimposed upon the structure, as mosaic, painting, plaster and paper.

Wood no doubt formed the earliest material for roofing, as indeed for the building generally, as it is a material which is easily obtained and easy to work, and the earlier classic orders were founded on the principle of the more primitive wooden structures.

The timbered roofs of the Gothic churches present an endless variety in their treatment, and good examples may be seen in most of the older churches.

In the Perpendicular Gothic period, stone tracery was carried to its utmost limit. What is known as fan vaulting consists of a series of inverted conoids springing from the pillars, concave in shape, separated at the summits either by pendants or by lozenge-shaped panels. The whole was covered with elaborate panelling. Examples may be seen in Henry VII.'s Chapel, Westminster Abbey; King's College Chapel, Cambridge; Gloucester Cathedral, and elsewhere.

It has already been stated that the introduction of the round arch led to vaulted ceilings and to the dome, with its opportunities for decorative treatment and display.

These opportunities were taken the fullest advantage of by the Byzantine architects in their sumptuous mosaic decorations.



ELIZABETHAN PLASTER CEILING FROM AUDLEY END.

The uninterrupted space which a ceiling affords for purposes of decoration has always been a favourite field for the operations of the decorative painter, and elaborate examples are to be found all over Europe, the most famous

of which is the ceiling of the Sistine Chapel at Rome, by Michael Angelo. The whole *field* of the ceiling was divided up architecturally, and an elaborate series of figure subjects from the Old Testament were painted in fresco. The work occupied about four and a half years.

The plastered and stuccoed ceilings of Elizabethan and Jacobean architecture consist of geometrical panelling enriched by various ornamental devices. These ceilings form a very pleasant contrast to the oak panelling of the wall.

Upon the introduction of wall papers, it became the fashion to paper the ceilings also. This practice has recently to some extent been discontinued, and plastered ceilings are again becoming the vogue. This seems to be an indication of a desire to return to the more dignified methods of decoration.

FLOORS AND FLOOR COVERINGS.

Floors may be of marble inlay, of mosaic, of tiles and bricks, or of wood, with wood inlay. Carpets, rugs, or skins may be used in conjunction with any of these.

The difference between mosaic and marble inlay (which is a form of mosaic) is that while mosaic consists of the piecing together of small cubes or *tesserae*, of hard substance and of different colours, to form a pattern, and to serve as a covering for a floor, wall, or ceiling; marble inlay consists of the *cutting* of various stones to the shapes required by the pattern itself, and piecing them together. Both are, properly speaking, mosaic.

Marble inlay and mosaic have been in use from very early times, from the time of the Pharaohs, in fact. We read in the Book of Esther of beds of gold and silver in

the Palace of Shushan, "upon a pavement of red, blue and white marble."

Mosaic in its different forms was the favourite method of both Greeks and Romans in decorating their pavements and wall surfaces. Marble inlay was also largely employed by the different countries of the East, notably India.

With the Byzantines, mosaic was the almost universal method for interior decoration, and magnificent examples may be seen at St. Sophia at Constantinople, St. Mark's at Venice, Torcello, Ravenna, and a number of churches in Rome.

Mosaic was employed at different periods throughout the middle ages, and its practice received a great impetus in the 16th century, when a large number of important works were executed in this method. The remarkable inlaid pavement in the Cathedral at Siena may be cited as an example, in which foliated ornament, figures and other

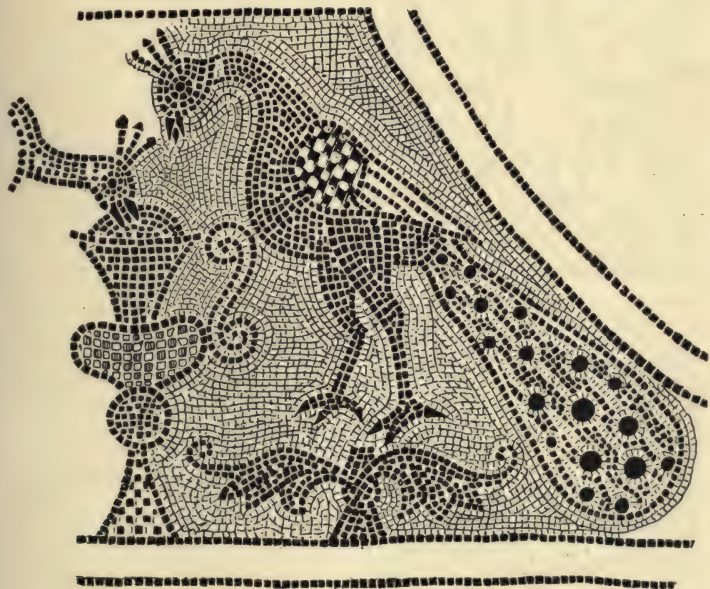


ROMAN MARBLE INLAY.

devices are introduced with the most sumptuous effect.

The material of mosaic is marble or other hard stones for pavements; glass and ceramic for walls and vaults. Glass is by far the most brilliant, and any possible range of pigment can be obtained.

The material of mosaic offers several advantages over the different methods of mural decoration. It is practically indestructible. It possesses a brilliance far beyond any ordinary pigment, and the play of light on the surface enhances its brilliancy. It is in complete harmony with



MOSAIC PAVEMENT, MURANO.

the general architectural scheme. It is comparatively easy to work.

There are two systems of working mosaic. The one for bolder work, seen from a distance, is executed *in situ*. A paste or strong cement is laid over the wall, and the *tesserae* pressed into the cement exactly as one would paint a picture. In the other, a reverse of the design is traced

upon sheets of strong paper, the *tesserae* placed *face downwards* upon the paper, and fastened to it with gum or paste. The sheets of *tesserae* are afterwards cemented

to the wall, and the paper is then easily removed from the face of the mosaic by damping.

In each case a full-sized coloured cartoon is made.

A variety of mosaic for pavements much employed in the early Christian churches is the well-known "Opus Alexandrinum," in which rectangular or circular slabs of porphyry or serpentine are surrounded by geometrical patterns, composed of small cubes of coloured stones upon a white ground of marble.

Encaustic tiles, much used for the paving of mediæval Gothic churches, and which are still made and used at the present time, consist of an inlay of different coloured clays,



ENCAUSTIC TILES, 13TH CENTURY.

which are afterwards burnt in the oven. The colours are usually orange and red, or red and black; and occasionally red, black and orange are used in the same tile. They are practically indestructible, as the wear of the tile does not interfere with the pattern, which is inlaid

throughout the whole thickness of the tile, or practically so. The patterns are of necessity, from the method employed in the making, treated entirely simple and flat. The two illustrations given are characteristic examples.

POTTERY.

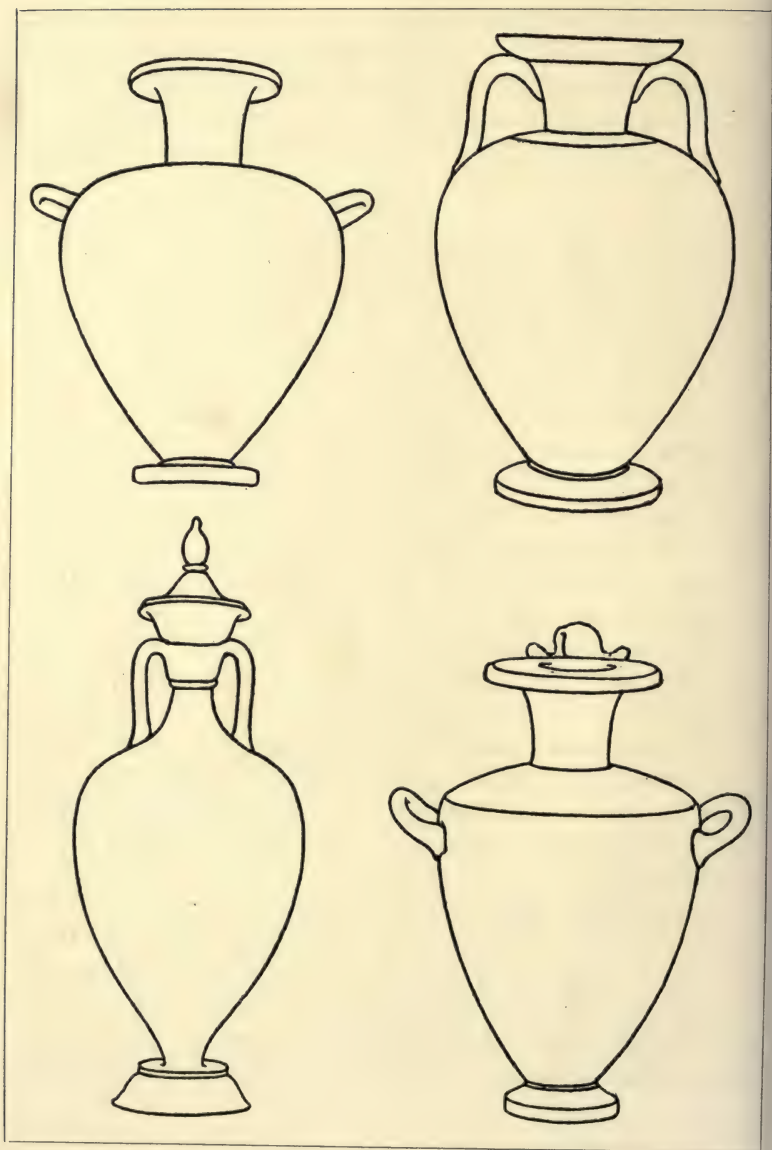
The art of the potter is one of the oldest arts practised by man. Adam was probably the first potter, although, if we may accept the Mosaic account, the various industrial arts do not appear to have made any particular headway until the advent of Tubal-cain.

Every schoolboy will, however, remember how Robinson Crusoe, as soon as he had scooped out his hole in the rock which served him as shelter, began to experiment in the making of earthen vessels, and discovered by accident that the sand, which was silicious, vitrified in the fire and produced a glaze, making the vessel lustrous and impermeable to liquids.

Glazed pottery was made by the Egyptians from a very early period, and at all subsequent dates to the present time.

The adaptability of clay, as manipulated by the hand of the potter upon his revolving wheel, is shown by the infinite variety of the forms of Greek and Etruscan pottery, in which refinement of form is carried to its highest point of development.

In the graceful lines of the Greek amphora it will be seen that the harmonious proportion of its parts is the chief consideration. The most frequent form of amphora is round-lipped, turning slightly over, and has three handles, one large and two smaller ones. This type of vase is invariably decorated on one side only, with an



VARIETIES OF GREEK AMPHORÆ.

inferior subject on the shoulder. A variety of amphora has two handles only, generally fluted, springing from the neck. The lip is more saucer-like and turns up instead of over. These vases are usually decorated all round, with figures and ornament in black and red, the ornament displaying the greatest refinement of draughtsmanship and design.

Greek vases are unglazed, or glazed so slightly that the glazing is scarcely apparent. It is supposed to have been produced by a dilute aluminous soda glass, the greater portion of which was absorbed into the substance of the piece, increasing its hardness, and leaving only a faint polish on its surface.

The substance known as Majolica obtains its name from the Island of Majorca, to which place the art was carried by the Arabs, and afterwards introduced into Italy. It is a hard buff earthenware, covered with a lead glaze, and largely employed during the 14th, 15th and 16th centuries.

It is to the Della Robbia family that the credit is generally given of being the first to employ majolica on an extended scale to the interior and exterior decoration of buildings, and a large number of works were produced by the different members of the family between the years 1430 to 1520. The works were modelled in high relief, and an enamel, made from a preparation of tin, was employed in order to obtain a white surface, the dull buff colour of the body being ill-adapted for the display of coloured ornamentation. A number of fine examples of Della Robbia ware are to be seen in the South Kensington Museum.

Pottery is far too extended a subject for all the various developments of the art to be even so much as noticed

here. In connection with modern pottery, however, it may be mentioned that there are two systems of decorating pottery, that which is done upon the *bisque* or unglazed surface, and afterwards glazed and fired, and that which is done *over* the glaze. Under-glaze colours represent the pure *bases*, and are sufficiently strong to withstand the great heat required for the complete fusion of the glaze. Over-glaze colours are mixed with a glassy *flux* to enable them to adhere to, and partly assimilate with the glaze, but which weakens them considerably. If a piece of over-glaze painting were passed through the great heat of the glost oven, there would be practically nothing left. There is no possibility of comparison between the two processes in the matter of softness and quality. It must, however, be admitted that a greater delicacy of workmanship is obtainable by work done on the glaze, which seems suitable to the more delicate wares, such as china and porcelain.

Pottery appears to be the one craft which has remained practically untouched by the modern decorative art movement, although excellent work has been done recently by a few isolated individuals, such as De Morgan and others.

The conditions which obtain at present in Staffordshire and elsewhere are simply deplorable. Hand work is practically non-existent, and its place is now taken by a system of lithographic transfers, which are printed from the stone on thin paper, in various pot colours, and sold by the gross to the various manufacturers to be clapped on the ware.

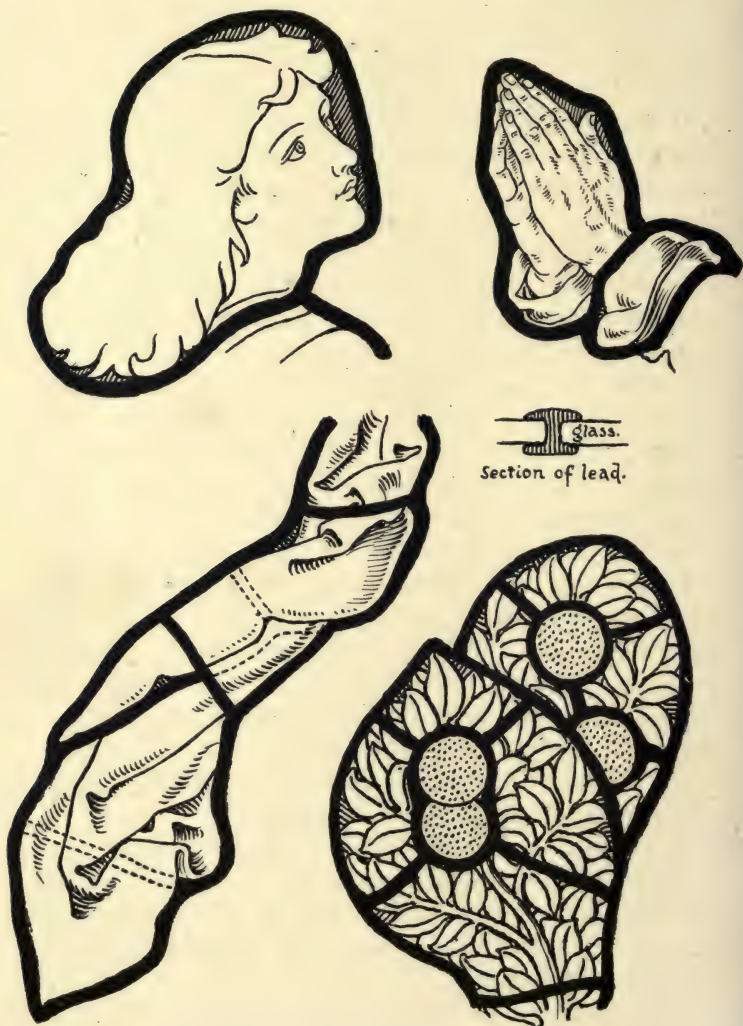
In Staffordshire the old race of potters, who took a pride in their productions apart from trade considerations, have become practically extinct, and it would require another large-minded enthusiast like Josiah Wedgwood to bring about any change.

STAINED GLASS.

It must be understood that stained glass is a mosaic of different pieces of coloured glass held together by means of bands or strips of lead. (See Illustration of section of lead.) These leads are in turn strengthened by iron bars of varying thickness, from about one-third of an inch to one inch, according to the size of the window, running transversely across the window at intervals of fifteen inches or more. The colours introduced in the window are the colours of the glass itself, that is to say, if blue drapery is introduced, blue *glass* is used, if it is red drapery, red glass is used, and so on. White glass, known as antique or cathedral glass, which is really of varying tints of pale green, quite low in tone, and only partially transparent, is generally used for the flesh. There is, however, a substance known as *pot-metal*, which is of two kinds, that which is of the same metal throughout, or that in which different colours are *flushed* over other colours. This *flash* may be lightened or removed by means of fluoric acid. The natural tints of flesh may be produced by means of pot-metal. The only colour pigment used in glass painting is brown, which is used for the shading and tracing of all the parts, flesh, drapery and accessories.

There are also *stains* of varying tints of yellow, which are made from a preparation of silver, and are used upon the *white* glass to stain diapers, hair or other parts, for the purpose of further enrichment. The stain is applied to the *back* of the glass.

Each different colour must necessarily be surrounded by lead, and large surfaces of one colour must be subdivided by lead in order to enable the glass cutter to work



THE LEADING OF STAINED GLASS.

the glass easily, and to prevent breakages in the firing and leading of the glass.

The *rationale* of stained glass designing is as follows:— A small colour sketch design is made, usually to the scale of one inch to the foot, the chief consideration in these small colour sketches being to settle the disposition of the masses of colour and the general arrangement of the design. The position of the iron strengthening bars must also be settled in these small sketches. In single figures it is a comparatively simple matter to arrange the bars so that they shall not run across important parts, such as heads and hands, but in a composition of figures it is necessary to keep the bars in mind while arranging the figures. As a matter of fact, the bars are usually set out first and their position altered wherever the exigencies of the design demand it.

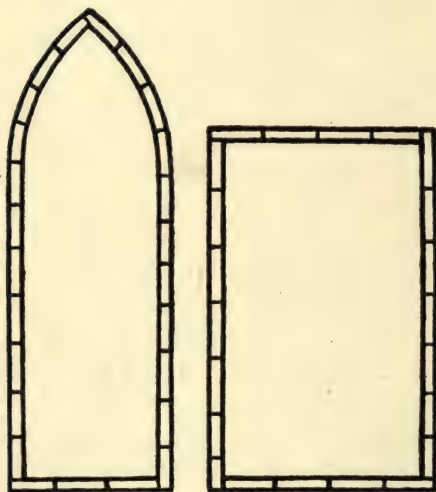
A full-sized cartoon in monochrome is then prepared, in which all the different details, and especially the lead lines, are carefully worked out. The leading is, in fact, one of the first things to be considered. These cartoons are usually done either in wash (bistre) or charcoal; which latter method is more suitable for work on a large scale, as charcoal seems to induce finer style. The lead lines of the cartoon are then traced upon tracing cloth, the *centre* of the lead line being followed. This forms the working drawing; the glass cutter works from this, and cuts his glass (which has been carefully selected to suit the various colours required) just within the lines, to allow for the thickness of the core of the lead. The pieces of glass are then set up on a large sheet of plate glass by means of pieces of wax, and placed in front of the light. It should be stated that the traced line-work is usually done by placing the separate pieces of glass upon the cartoon and the lines traced through the glass. The

mediums used are, for the line-work, turpentine, fattened and made workable by oil of turpentine, or jappanners' gold size, and water with a little gum for the *matte* or tints.

After a little skill is acquired, glass painting is very pleasant and attractive; any degree of modelling and variation of tone may be obtained by working upon the

flat matte of colour with a stiff hog-hair brush; the lights may be further heightened by means of a pointed stick or quill.

The glass is then sent to the kiln for firing, and afterwards, if it requires no re-painting and, as a consequence, no re-firing, it is placed in the hands of the lead-worker to be put together, the joints of the leads being soldered, and



THE WHITE LINE.

the leads filled up by means of a cement to make the window firm and water-tight. The cement is a mixture of white and red-lead, whitening and lampblack, with the addition of dryers and oil. It should be stated that for convenience, large windows are leaded in sections, which are afterwards joined together.

It should be mentioned that what is known as a white line, cross-leaded at intervals (see Illustration), should run

round the whole window in order to detach the design from the stonework, or woodwork, as the case may be. The width of the white line varies according to the size of the window, from a quarter of an inch to an inch.

As for the historical part of stained glass, unlike sculpture, fresco, or pottery, it is comparatively a modern art. There is no evidence of any stained or painted glass prior to the 10th century. No mention of a painted window certainly dates anterior to the Christian era, and it is probable that for nearly a thousand years after the advent of our Lord the art was unknown.

The Church in the middle ages, however, took the art under the ægis of its patronage and protection, and so rapidly did it arrive at a certain perfection, that instead of being a gradual growth, like painting and sculpture, it started at once mature, and, as one writer very aptly says, "Sprang all armed, like Athene from the brain of Zeus."

The different styles or periods through which the art passed may be broadly divided into three.

The earliest period, from about 1200 to 1280, was a development of Norman influences. The character of it is nearly allied to heraldry. It abounds in symbolism and is at once the most superb and magnificent of all the styles ever attempted in this art. The general scheme of decoration consists of a series of medallions or panels, circular or lozenge and other shaped, containing subjects, arranged in a symmetrical manner, and embedded in a mosaic ornamental ground formed of rich colours. The leading colours are ruby and sapphire, the quality of which is unrivalled in any subsequent period of the art. Examples of this period of glass may be seen both at Salisbury and Canterbury, at the east side of Ely and

north transept of York Cathedrals; in France, at the Cathedrals of Chartres and Sens.

The second period, or so-called Decorated style, 1280 to about 1380, differed largely from the preceding one in the vaulting and formation of the windows. The principle of medallions was partially retained, but the system of minute and elaborate mosaics almost entirely disappeared.

The third period, which is generally known as the Perpendicular style, 1380 to 1530, was wholly confined to this country. In some respects glass reached its highest development during this period, but at the same time it must be said to mark the beginning of the decline. Mosaic medallions and geometrical forms of enrichment were now entirely abandoned, and a much greater fancy and freedom of arrangement was permitted. The glass of this epoch was much thinner and more fragile in substance than in the preceding ones, some of it less thick than that used at the present day. There are few important churches in this country which do not possess some remains of Perpendicular glass, so very extensively was the art practised during this period. As an example the great east window of York Minster may be cited. Amongst the more important stained glass which was executed about the close of the 15th or beginning of the 16th century are the justly celebrated windows of the little Church of Fairford, in Gloucestershire. These windows are of Flemish workmanship. A great deal of romance has grown about and in connection with them. They were supposed to have been captured at sea, and no less a person than Albert Dürer is credited by some authorities (erroneously, however) with having supplied the cartoons for them. These windows, twenty-eight in number, are amongst the very finest specimens of this period of the art, and any

reader who wishes to make their more intimate acquaintance can do so in the pages of the admirable monograph by the Rev. J. G. Joyce.

From the 16th century downwards glass, in common with the majority of other forms of decoration, gradually declined, and it is only within recent date that stained glass has been rescued from the oblivion which had overtaken it for so many centuries, and during the last forty years or so the art has recovered much of its lost beauty, both as to design and material.

Simultaneously with this English renaissance of glass, the Americans have been trying to strike out an entirely new path for themselves, and they have unquestionably succeeded in producing something which has at least the merit of novelty.

The material of American glass, such as is produced by Messrs. Louis C. Tiffany, Mr. La Farge and others, is rather handsome, and has a certain richness and even splendour of appearance. It is characterised by certain roughnesses of surface, inequalities of thickness, bubbles, corrugations and the like. Very excellent effects are obtained by flashing one colour over another in streaks and waves. This produces a figuring on the glass which is very interesting. Mr. La Farge makes an opalescent glass with certain jewel-like qualities rendering it as valuable by night as well as by day.

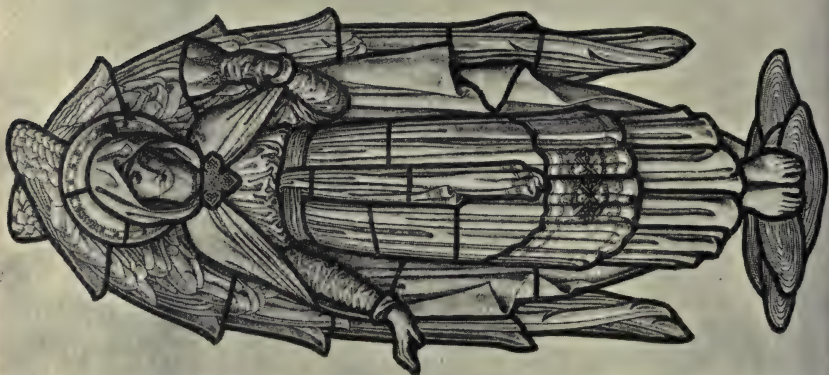
This ingenious gentleman is said to have introduced several other improvements in the working of glass (which he has no doubt duly patented). One is, fusion of the different pieces of glass!! rendering leads unnecessary!!!

This is an amusing travesty of the very principles on which the art should be founded. If there is one thing more than another which is distinctly characteristic of

stained glass it is the lead lines. These should always be insisted upon, and can hardly be too much insisted upon, as nothing strengthens a design more than fearless leading.

This doing away with leads illustrates very well the difference in spirit between American and English glass. Burne-Jones is said to have declared that it gave him absolute pleasure to draw a lead line right across a face.

There are two things of paramount importance in stained glass:—lead and iron. Our business, therefore, in this, as in other arts, is to accept frankly the limitations which the material imposes on us, to make no attempt to minimise or conceal these things, but to make them an effective element of any design. Leads are, indeed, of the greatest service to the designer. If it be necessary to emphasise a particular form, there is no better way than by running a lead line round it. A lesson which we learn from the old glass painters is, however, never to lead completely round a form, especially in ornament, as it tends to *hardness* of effect. An example of what is meant is given in the illustration of the piece of drapery; if the turnover of the drapery represented a different colour, as a matter of course, a lead line would have to be run along its edge, but if the whole piece of drapery were of the same colour, it is a good plan to run the line half-way and stop it by a cross-lead. Variety is arrived at by this means. An alternate way of leading this piece is given by the dotted lines. A fault in the work of one or two modern artists, whose work is in other respects extremely skilful, is to divide up the drapery of a figure irrespective of its leading lines, or without taking them into consideration, and the appearance is that of a figure behind a grill. The leads should form an integral part of the design. Leading requires the greatest possible care and consideration.



The Illustration given of the cartoon of the three angels explains itself. It was done for a well-known firm of glass workers. It will be noticed that in two instances the heads and the nimbi are made in one piece of glass, the nimbi being white with yellow stained ornament. If the nimbi were coloured, the heads would have to be leaded round. In the centre figure the head is draped with coloured drapery; the head has, therefore, to be leaded.

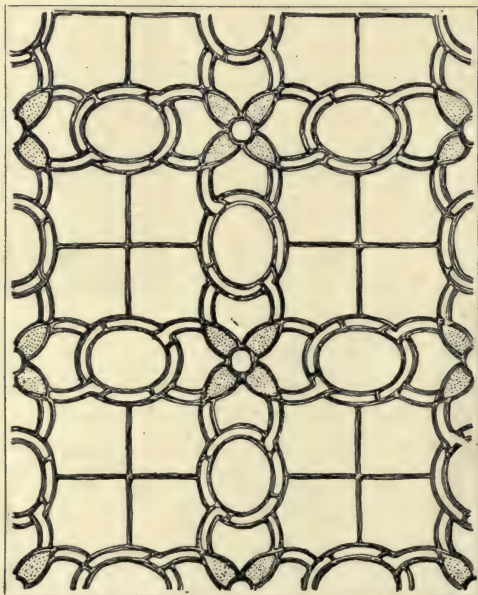
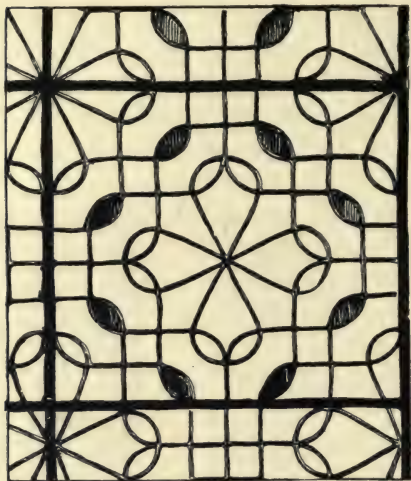
In the composition of a number of figures which are not large, several heads coming together, as often happens, may be leaded in one piece of glass, and often look better so, rather than leading each head separately. This is another instance of the principle above mentioned of not leading completely round every form.

It will readily be gathered from the foregoing that any attempt at naturalistic effects in glass is a mistake, that the thing must be treated as a piece of decoration, as a piece of architecture in fact. Lines, long continuous lines, are always most effective in stained glass, especially in Church work. Burne-Jones knew well the value of continuous lines in glass, and his work owes much of its fine style to its frank recognition of the decorative principle.

There may be said to be two systems of stained glass.



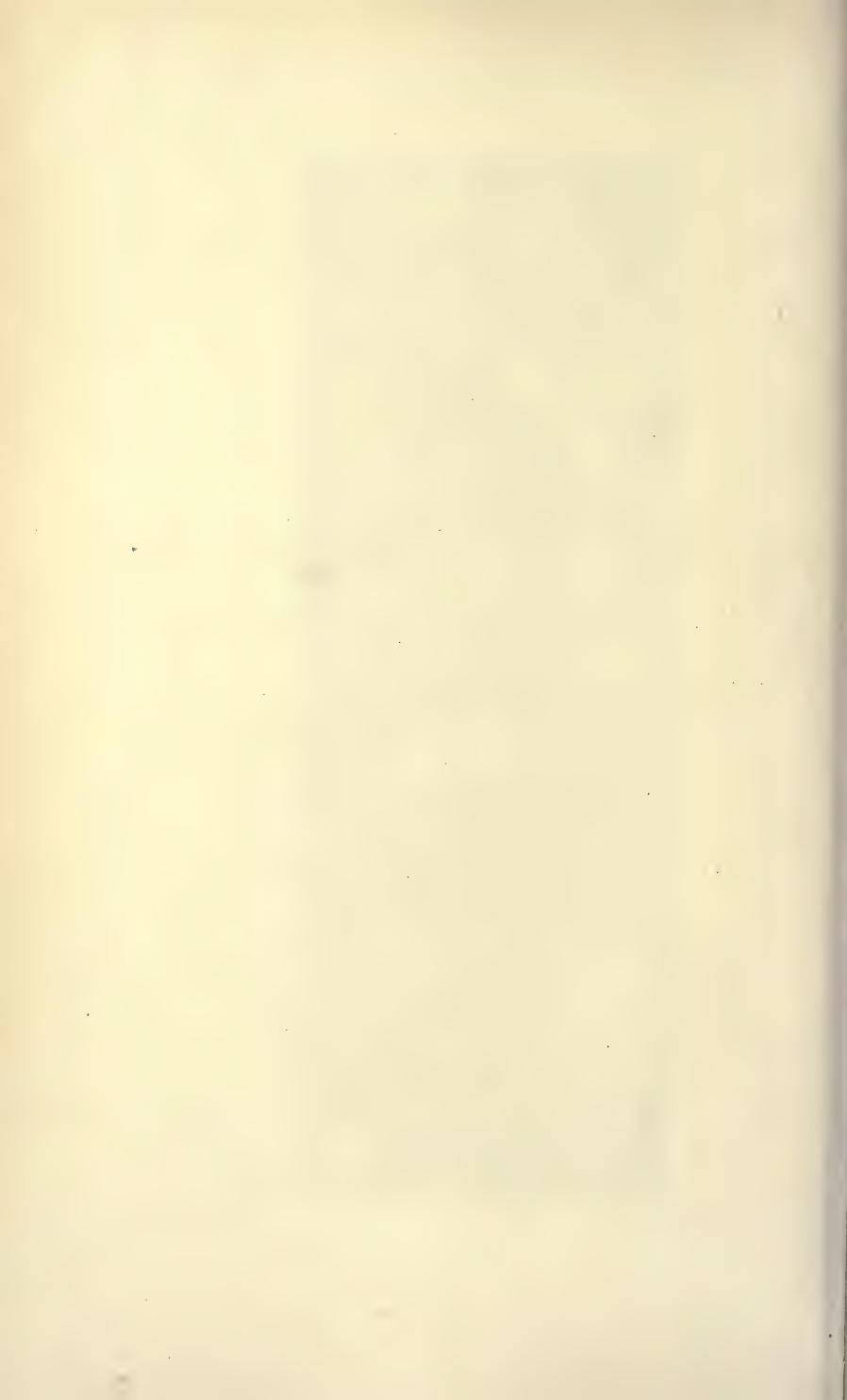
GLAZING IN PLASTER.



PLAIN GLAZING, FROM ST. GERVAIS AND LISIEUX.



APOLLO AND THE MUSES.—BY G. WOOLLISCROFT RHEAD.

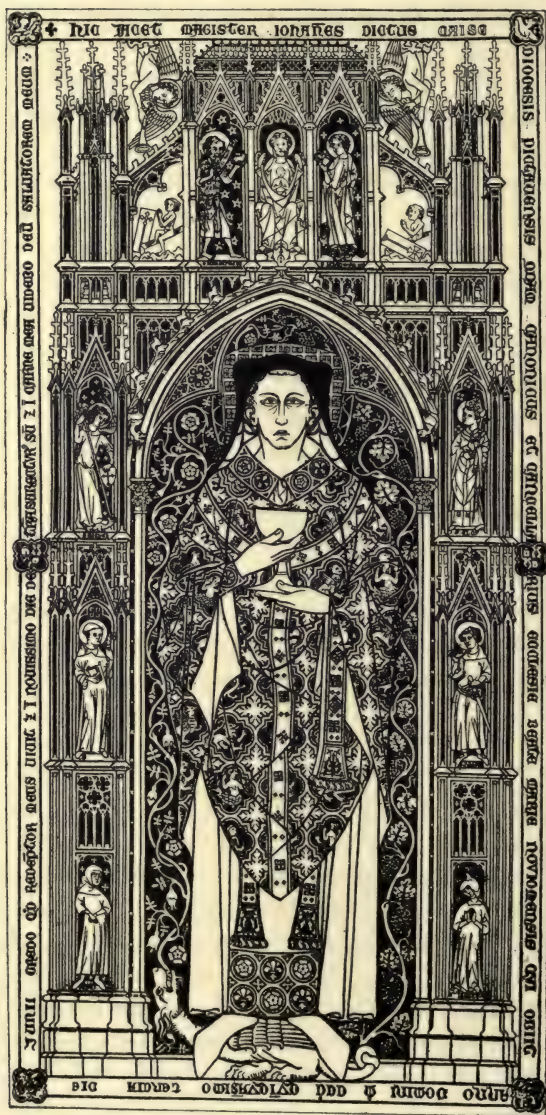


The one is to load up each portion of the window, flesh, drapery, and background with the brown pigment, focussing the lights as far as possible, and obtaining something of a Rembrandtesque quality. The other is to reduce the amount of colour as far as possible, using the glass as pure as possible, and thus obtaining the maximum amount of light which the window will give. This latter method approaches what is known as plain glazing, a method which has been revived of late by architects and largely made use of, especially for domestic work. In plain glazing no painting whatever is used; it is simply a mosaic of different coloured glass. In earlier work it was usually kept very simple, both in form and in the number and amount of colours used. (See Illustrations given from St. Gervais and Lisieux.) Recently, however, all kinds of subjects have been treated; even landscape of a flat decorative character has been treated quite successfully, as the *figuring* of modern glass may be made to supply to a great extent the variety which was obtained by the colour pigment.

The possibilities of plain glazing are, however, by no means exhausted, and it may be said to have a future.

MONUMENTAL BRASSES.

Monumental brasses have a certain affinity with stained glass in the character of their subjects, and in the severity which is imposed by the nature of the material. The engraving or making of a brass consists in the cutting or gouging of lines upon a metal plate or plates, the parts sunk or incised being filled in with a black enamel or encaustic substance, and colour by means of enamel often introduced in parts. Brasses form excellent examples for study in their general decorative treatment, the



INCISED MONUMENTAL SLAB.—FRENCH GOTHIC,
CIRCA 1350.



BRASS OF MARTIN DE VISCH. BRUGES, 1452.

treatment of the drapery being exceedingly fine, especially in the earlier examples, which depend for their effect upon expressive outline, usually contrasted with rich diapered backgrounds. The later brasses exhibited a tendency towards a freer and more pictorial treatment, and much cross-hatching was used for the purpose of expressing relief, with a corresponding loss of simplicity and dignity. The brass of Martin de Visch, Bruges, of which an illustration is given, is an excellent example of the treatment of heraldry, both in the tunic and in the mantling.

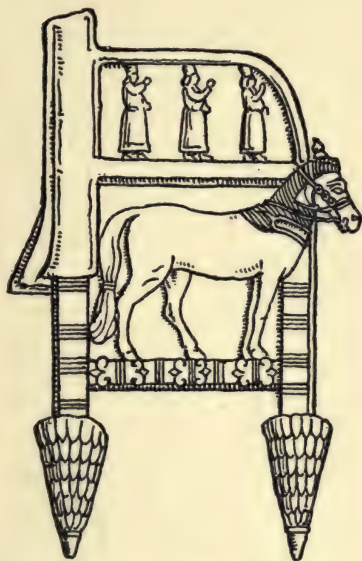
The use of brasses dates from the early part of the 13th century, and fine examples were produced up to the end of the 15th century, when the art began to decline. In the 18th century the use of brasses ceased, but the art has been recently revived with some success.

FURNITURE.

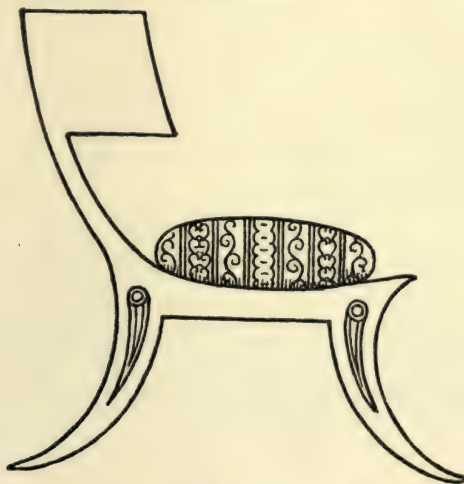
Furniture is another of those important divisions of the industrial arts which are so extensive that they can be little more than glanced at here.

Furniture may be said to date before architecture, since, if one happens to live in a tent, one must have something more than the mere ground to sit upon, to feed from, and to store one's goods in.

Wood has universally been regarded and adopted as the material for the various articles of domestic and other furniture on account of its adaptability, and general fitness. Ivory has been used for chairs of state, &c., and largely used as an inlay, together with other materials. Bronze and marble were used by the Greeks, who had a great variety of ornamental furniture, such as candelabra, tripods, braziers, stools, couches, &c., numerous examples of which are preserved in the British Museum.



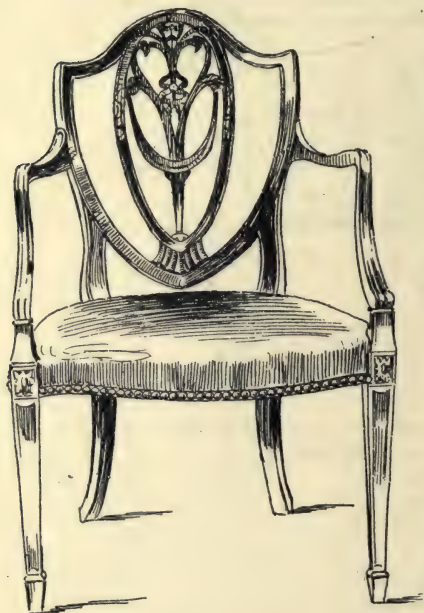
ASSYRIAN CHAIR FROM A BAS-RELIEF
AT NINEVEH.



GREEK CHAIR.
(HOPE'S "COSTUMES OF THE ANCIENTS.")

On referring to the example given of a Greek chair from Hope's "Costumes of the Ancients," it will be seen that the chair has undergone little structural modification since the classic times, and has usually been some form of stool

or seat with a back to afford rest for the upper portion of the body.



SHIELD-BACK 18TH CENTURY CHAIR,
PROBABLY BY HEPPLEWHITE.

The famous chair or throne of St. Peter in the Church of St. Peter at Rome is, with the exception of the Greek bronze furniture above alluded to, the earliest example of furniture in existence, and is made of wood overlaid with carved ivory and gold. The back is architectural, with a row of columns and a pedimental top.

Another celebrated chair is in the Louvre, and is said to have been made for King Dagobert about 630. It is of bronze, gilt, and a copy is to be seen in the South Kensington Museum.

Few examples of the furniture of the earlier mediæval period remain, and we are mainly indebted to pictures, manuscripts and other records for our knowledge of it.

During the Italian Renaissance much ornate carved



FRENCH OAK COFFER, LATE 15TH CENTURY.



furniture was made, consisting of chairs, seats, tables, cassone, cabinets, &c., as well as the various furnishings of the church, such as choir-stalls, screens, &c. The South Kensington Museum is rich in examples of the furniture of this period. A large quantity of excellent furniture was produced during what may be called the English Renaissance of furniture in the 18th century, by such men as Chippendale, Sheraton and Hepplewhite, and a chair in the style of the latter designed, if not actually made by him, is illustrated. Since this period furniture has shared the fate of the rest of the decorative arts.

THE BOOK AND ITS DECORATION.

BOOKS may be broadly divided into two great classes, those written by the hand of the scribe or calligrapher, which were often illuminated in a more or less sumptuous manner, and those which were printed from a moveable metal type, and which were often illustrated by the various reproductive processes of engraving upon wood or metal. There was, however, some degree of overlapping, as for some time after the invention of printing in the middle of the 15th century, it was a common practice for the margins of printed books to be illuminated by hand, and spaces were left in the type for the insertion of initials in colours and gold.

The earliest books were of the character of monumental inscriptions, such as the hieroglyphics of the Egyptians, and the tables upon which Moses wrote his ten commandments, which were of stone.

Tablets of ivory and metal were in common use with the Greeks and Romans, but the earliest *flexible* material was that which the Egyptians made from the leaves or outer coatings of the stalk of the papyrus plant, from which is derived our present word *paper*. Parchment and vellum was employed after papyrus, and paper was made from cotton or linen as early as the 9th century.

One of the most remarkable of the early books which have come down to us is the Papyrus of Hunefer, or "Book of the Dead," now in the British Museum, and of which the Museum authorities have published a handsome *fac-simile*.

It measures 18 feet by $13\frac{3}{8}$ inches, and is composed of three layers of papyrus of a fine light colour, and was written during the reign of Seti I. (about B.C. 1370), by Hunefer, who was an overseer of the palace and a royal scribe.

This book is a remarkable example of expressive line work, and is extremely beautiful in its simple arrangements of colour, and its colour quality.

The art of the calligrapher and illuminator was widely cultivated by the monks of the middle ages. A great style of illumination was developed in the monasteries of Ireland before the conversion of the English to Christianity, and a number of remarkable books were produced, the most famous of which are "The Book of Kells," "The Book of Durrow," "The Gospels of Lindisfarne and St. Chad," and many others, the chief characteristics of the decoration of these books being intricate interlacements, ribbon work, elaborate spirals and grotesques (see Illustrations of grotesque from Cotton MS., British Museum, p. 174, and spiral from "The Book of Durrow," p. 114), the whole being wrought in a beautiful colour harmony of a low-toned kind, gold and silver being occasionally introduced.

From the 10th to the 15th century a constant succession of beautiful illuminated books were produced, the general character, however, of the ornamentation exhibiting a gradual decline from about the end of the 12th century, the fragment given on p. 126, as an example of subordination, being of the 14th century.

In the middle of the 15th century an event occurred which was destined to exercise a most material influence upon the book, for good or for evil, or for both, *i.e.*, the invention of printing. A comparison of either of the examples given from the earlier printed books, with the



SV nell'ultima piaggia io era giuto
 & qñ pla strada io mouea el passo
 scòtrai Cupido el q̃l mhauea trapū
 Nò pero mai che migistasse ad basso (to
 timor didio & uergogna del mondo
 mitention ritto come quadro falso
 Trouai adūque lui uagheſto & biondo
 di cui belta negliatri uerſi ſcripſi
 che mai ſi bello fu ne ſi giocondo
 Ma hora ueggio ben che falſo dixi
 chegli e/ crudele bruſto et piè di toſco
 chi ben rimira lui co gliocchi fixi
 Quando miuidde egli fuggi in ū bosco
 che era iui preſſo oue nulla era frondi
 ma era ſmorto ſecco & tuſto ſoſco
 Perche Cupido da me tinaſcondi
 chiamaua io forte drieto ſeguitando
 perche tu fuggi perche non riſpondi
 Io ſon colui che teco uenni quando
 lenymphe mimonſtraſti & laua dura
 & ſempre ſteſti preſto al tuo comando
 Dimonſtra latua faccia bella & pura
 allhor uoltoſſi & era ſ. trauolto
 che quando eluidi mi miſſe paura
 Egli era ſmòto & gliocchi bruſti eluolto
 & ſu nel capo negro hauea duo corni
 egli adī hauea pazzechi come ſtolto

Allhor fuggi da me come huò ch ſcorni
 collarco i mano & cogli obſcuri dardi
 ne credo che piu ad me giamai ritorni
 Ladea ad me ſe queſto amor riguardi
 egli e/ coſa infernale & chi loſcuopre
 conoſce imodi ſuoi falſi & bugiardi
 Chiamato e/ elſòte dio nel módo ſopre
 da quegli ſtolti che ſol guardan fuore
 allapparenza che ſpeſſo eluer cuopre
 Ma perche ſappi ben che coſa e/ amore
 ſappi che amore e/ preſente dilecto
 o uer futur piacer che ſpera elcore
 Et queſto puo hauer triplice obiecto
 primo e/ utilita qual ſe ſi toglie
 manca lamor challutil facea aſpecto
 Laltro amor uero ad cui leuerdi foglie
 non ſecca tempo'o loco che ſta fermo
 ad ogni caſo che fortuna uoglie
 Et non e/ luſinghieri in adī o ſermo
 & cò lamico ſta coſtante et uiuo
 quādo e/ in aduerſita pouero o i ſermo
 Et queſto uero amore elqual deſcriuo
 ſichiamo uirtuoſo o uer honeſto
 theſoro a imortali celeſte et diuo
 Elterzo amor chio dico doppo queſto
 piacer concupiſcibile ſi chiama
 che ſol dal corporal diſio e/ deſto

Che coſa
 e/ amore

Coriolanus Cepio Clarissimo uiro Marco Antonio Mauroceno equiti apud illustrissimū ducem Burgundię Venetorū oratori felicitatem.



Vom prefectus triremis ad classem proficiscerer: quam felicissimus imperator Venetorū Petrus Mocenicus contra Othomanum Turcorū principē ducebat: uehementer rogasti me: ut quicquid in hac expeditione gestum esset litteris mandarem: affirmans ea te Apollinis oraculo uetiora habiturum quę a me scripta forent. Igitur ut tibi morē gererem: quę ab imperatore Mocenico per quadrienniū gesta sunt annotaui: Tanto enim tempore & ille imperiū gessit: & ego prefectura functus sum. Quapropter opusculū in quo hęc scripta sunt tibi mitto: quod cū perlegeris: nō minus te egregias imperatoris uirtutes quā magnifica ipsius gesta admiraturū certū habeo: meritoque damnabis eorū sententiā qui affirmare solent effœtam esse naturam: nec producere tales uiros quales priscis temporibus extiterūt: omniaque mundo senescente degenerasse: quę falsi sint uel ex hoc maxime apparet. Nam si

2 2

illuminated page opposite, will serve to show what a poor exchange the printed type was to the exquisite hand writing of the finest periods.

The printed book was, however, the natural outcome of the general demand for increased facilities for the dissemination of knowledge; and while no mechanical production can be expected to vie with the productions of nature's great machine, the human hand, the printed book had its uses and advantages, at any rate it came to stay.

Coeval with the invention of printing was the rise of the art of the engraver both of wood and metal (although the art of engraving existed, in some form or another, long before the 15th century), and from the date of the first book issued by Gutenberg, in 1454, to the end of the 16th century a large number of fine printed books were issued.

One of the most famous of the early printed books is the "*Hypnertomachia Poliphili*," printed by Aldus at Venice in 1499. It was illustrated by a series of 168 woodcuts, the designs for which have been attributed to various famous artists. The type is Roman of a fine character.

The page illustrated from the "*Gesta Petri Mocenici of Cepio*" is quite perfect in proportion and arrangement, and the border is designed with a full consideration of the decorative value of the type. The page from the "*Quatri-reggio of Frezzi*" is less satisfactory; the woodcut, although fine in character, is too small for the type, and the initial evidently not designed for the page, but most probably formed part of the printer's stock ornaments.

The decoration of books shared the fate of the rest of the decorative arts, and exhibited a gradual decline from the end of the 16th century. Towards the close of the



ILLUSTRATION TO TENNYSON'S "ELAINE" (R. H. RUSSELL, NEW YORK, 1900).—"PROCESS" REPRODUCTION OF A PEN DRAWING BY G. WOOLLISCROFT RHEAD.

18th century the work of Thomas Bewick infused new life into the art of wood engraving, and about the same time William Blake was issuing his remarkable productions under the most adverse circumstances. Blake's work, however, exercised no influence upon his time; its true value is only now beginning to be appreciated, nearly a century after his death.

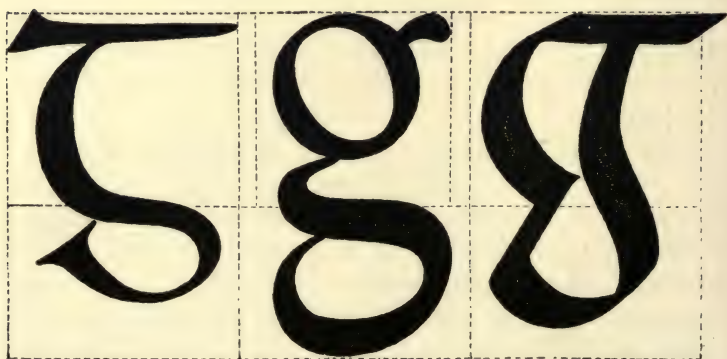
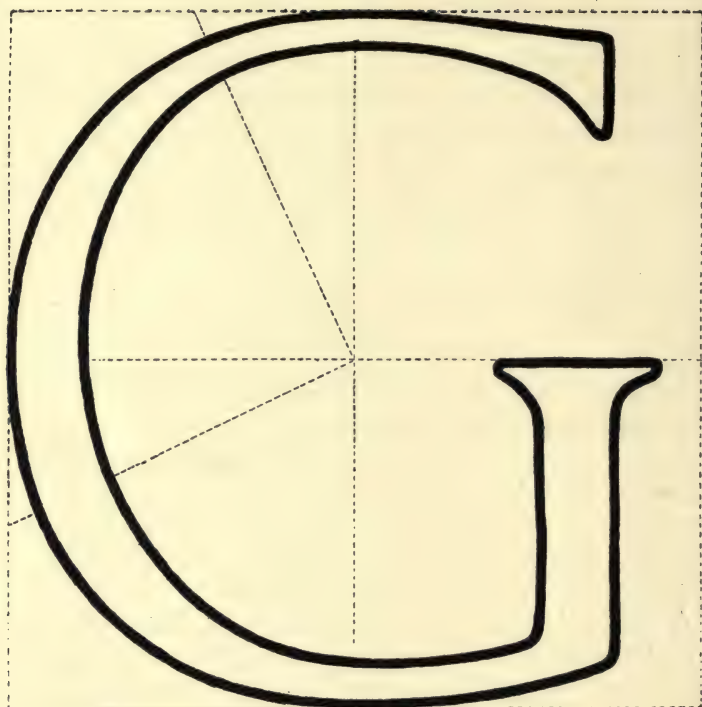
About the middle of the 19th century a number of able artists in this country were designing for book illustration, and a distinct school of reproductive wood engraving sprang up, which lasted until the introduction of the various photographic processes about twenty years ago.

For all practical purposes reproductive wood engraving may now be said to be dead, the present tendency being in the direction of cheapness and rapidity of production. The pen of the draughtsman, together with the camera, has taken the place of the engraver's burin.

A number of praiseworthy efforts have, however, been recently made to revive the art of *original* wood engraving, and some interesting and even admirable work has been done.

Our own age has also witnessed a revival of fine printing. Such a book as the Kelmscott "Chaucer" must be admitted to rival the finest productions of the printers of the past.

The subject of lettering may also be considered in connection with that of the printed page. This subject also has received some attention during recent years. Several books dealing with lettering as an art have been issued, and a distinct advance has been made in the direction of forming a better standard of taste, and stimulating interest in the earlier and finer forms of both Roman and Gothic lettering.



LETTER G, FROM AN ALPHABET BASED ON THE LETTERS OF THE
INSCRIPTION ON THE TRAJAN COLUMN, ROME. (PUBLISHED BY
THE AUTHOR.)

The chief difference between old Roman capitals and the modern variety with which we are familiar, in our books, magazines and newspapers, lies in the matter of *proportion*, the modern letters all being substantially alike in bulk, and occupying an equal space. In all old capitals, however, the round letters occupy nearly twice the amount of space of the square letters, thus establishing a greater variety in an inscription; moreover, the thickest and thinnest parts of the round letters are not in the centre of the curve, as in the modern, but are placed above and below the centre as the case may be. The curves themselves are not simply geometrical curves, but carefully considered quantities which impart a character to the letter which no mechanical construction can give.

The example of the letter G, illustrated on p. 96, forms part of an alphabet of Roman capitals which was carefully enlarged from the inscription on the Trajan Column, Rome, and which inscription, upon the whole, may be considered as the finest in character and proportion of any Roman letters available.

BOOK COVERS.

The materials which have been used for the binding and covering of books in the earlier times when the book was a precious possession are,—gold, silver, and ivory, often set with jewels. In later times, leather, at the present time, leather, for the more expensive works; cloth, and paper.

Few of the early bindings have come down to us, as the richness and intrinsic value of the coverings was generally fatal to their preservation. Some very fine late Byzantine examples are preserved in the Treasury of St. Mark's, Venice, one of which is illustrated. A fine example of



CATALOGUE COVER (PAPER), DESIGNED BY G. WOOLLISCROFT
RHEAD.

early binding is the "Textus" cover in the South Kensington Museum, which is in *repoussé* gold and



BYZANTINE BINDING.—TREASURY OF ST. MARK'S, VENICE.



BOOK COVER, TOOLED LEATHER, DESIGNED BY LOUIS RHEAD.

filigree, with plaques of *cloisonné* enamel, and set with stones. It is German, probably of the 12th century.

Leather has always, from the 12th century downwards, been a favourite material for the binding of books, and the decoration of these leather bindings consists of the impress of steel tools, cut to the shapes required, to form a more or less repeating pattern, the tools forming the unit of the design.

The earliest English leather binding, and a very fine example, is that of the Gospel of St. John, in the library of Stonyhurst College, and dates from the 10th century.

In the 16th century a number of craftsmen were producing important work, the most celebrated being Maioli, Grolier and De Thou. In England during the reign of Henry VIII., one John Reynes flourished, and in the middle of the 18th century Roger Payne was producing admirable binding.

During the last twenty years or so a revival of interest in fine binding has set in, and a number of able craftsmen are doing excellent work.

Embroidered covers were common during the 16th and 17th centuries, and were elaborately worked in silk, gold thread, and occasionally pearls.

In the cloth bindings which are so usual at the present time the ornamentation is impressed with a brass stamp, cut to the design required.

THE ELEMENTS OF ORNAMENT.

THE STRAIGHT LINE.—This is the simplest elemental form. A series of perpendicular lines drawn between two horizontal lines produce what may be called the most primitive form of ornamental expression (1). Fig. 1 may be varied almost indefinitely. The next step is diagonal (2); and by doubling this we get the feather pattern so common in savage ornament (3); then the lines may be alternated (4); and the next is got by using the triangular form instead of the square (5). The two following variations are obtained by a combination of the triangle and the square (6 and 7). Diagonals meeting, in the next, give the appearance of a plait (8). Contrast may be obtained by doubling the quantity of lines (9); also by varying the thickness (10); and by thickening the dividing lines of the pattern (11). A simple way of obtaining contrast is the following (12), which when doubled gives a very effective ornament (13); a stronger degree of contrast may be obtained by blackening alternate squares (14). And this leads us to the extensive subject of tiled, tessellated and mosaic pavements, which are mostly based upon geometric arrangements of the straight line. A good and effective example is shown in the geometric tile pavement, p. 105, which is a combination of the oblong and square, the effect of which is improved when seen in perspective.

We now come to that large class of diapers based upon geometrical forms, in which straight lines are of necessity



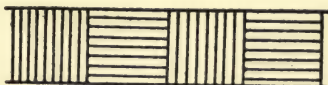
1.



2.



3.



4.



5.



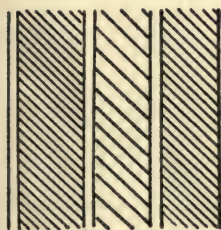
6.



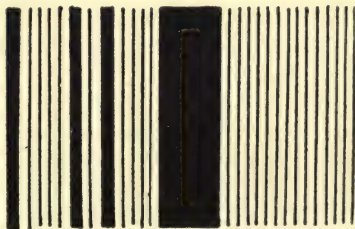
7.



8.



9.



10.



11.



12.



13.

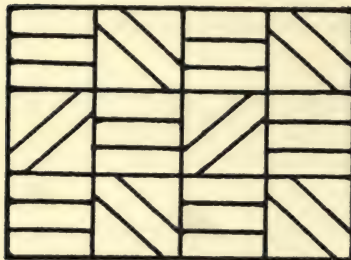


14.

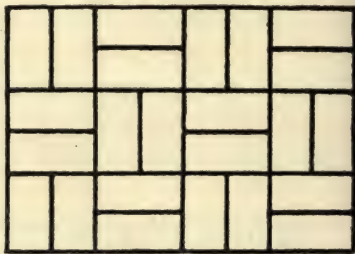
ORNAMENT DERIVED FROM ELEMENTARY LINES.

employed. The principle of development is precisely the same as in the case of borders.

Commencing with the square, we divide the first with two lines, and obtain variety by dividing the next square diagonally (1); a still simpler, indeed, the simplest

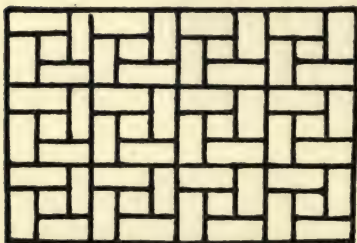


1.

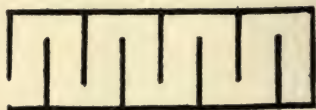


2.

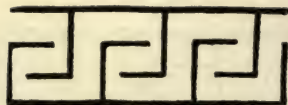
possible division of the squares is the next following (2); and another simple way is (3). This leads in the direction of frets and key patterns, of which there is an immense variety.



3.

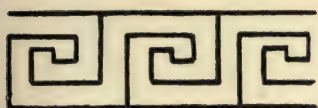


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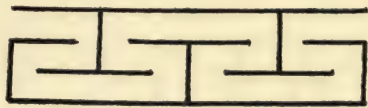


5.

Beginning with a simple alternation of straight lines, we get the above (4); by adding a joint we get the key pattern (5); and by adding another joint we get the Greek fret (6).

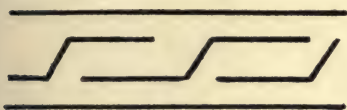


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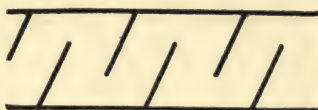


7.

Another variety of fret is obtained by the use of a form resembling the letter T (7), and this can be developed in the same way as the former examples.



8.



9.

Almost all these patterns may be varied by the simple means of placing the lines on the diagonal (8 and 9).

THE CIRCLE.—This form may be treated in a similar manner to that of the straight line, and is capable of almost as many variations. First, a simple sequence

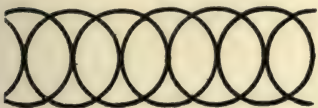


1.



2.

of circles just touching one another (1); then slightly overlapping (2); then the overlapping of circles just



3.



4.

touching each other (3); then an alternate series of small and large circles (4).

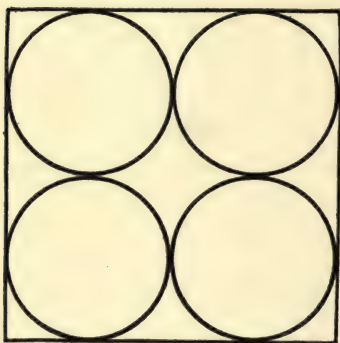


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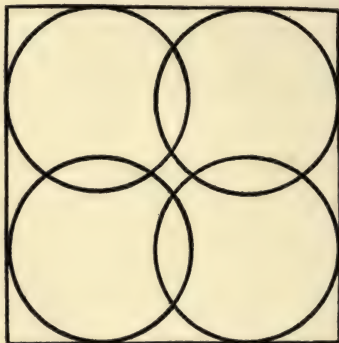


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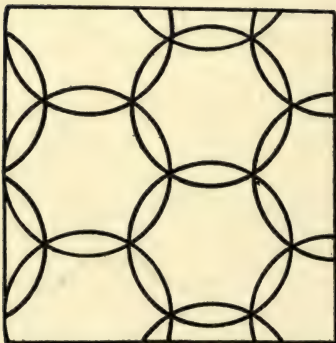
This leads to the large class of interlacing patterns formed on the circle, and also to the *guilloche* (5) ; from



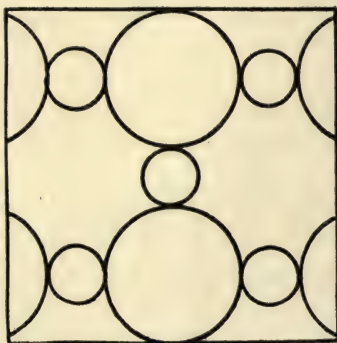
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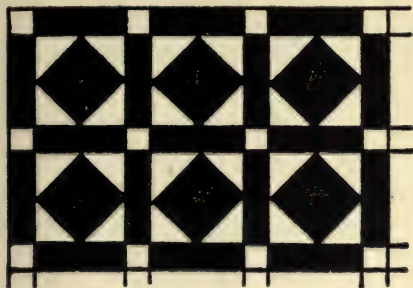


9.



10.

ORNAMENT DERIVED FROM THE CIRCLE.



GEOMETRIC TILE PAVEMENT.

this to the strap pattern, which may be called a broken double *guilloche* (6).

The circle is the element of an inexhaustible series of all-over patterns, of which the simplest are the four (7, 8, 9, 10) given on the opposite page.

Development may be proceeded with on the same principle as on the border.

It must not be forgotten that variety and contrast is readily obtained by the use of the straight line and circle in conjunction with each other. The variations are infinite, and the student should endeavour to invent his own combinations on the method or principle above indicated.



PARALLEL LINES IN THE DECORATION OF POTTERY.

A ZIG-ZAG is a triangular wave, and forms the leading motive of much continuous border pattern. It plays an important part in most primitive ornament.



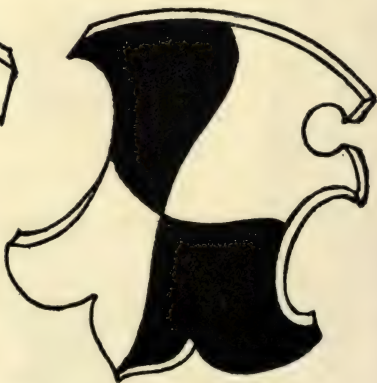
ZIG-ZAG.



MEANDER.



IMBRICATION.



SHIELDS FROM SERLIO'S "FIRST BOOK OF ARCHITECTURE"

A MEANDER may be called a blunted zig-zag. It is the principle of all climbing plant growth, and may be said to form the best leading motive for continuous border patterns in which a sense of growth is required.

IMBRICATION is scale work, and is obviously derived from nature, from the scales of fishes, the feathers of birds, and the structure of insects and shell-fish. It is a common ornament of the cuirass and shield, and is used in the ornamentation of mouldings, roofs and pillars.

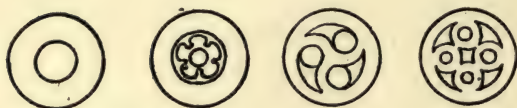
SHIELDS of all kinds are introduced freely in ornament,



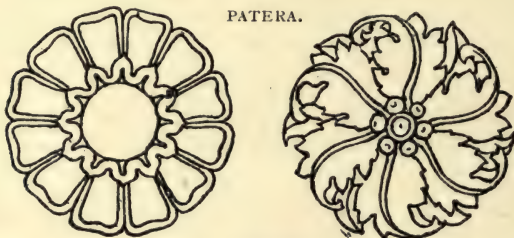
CARTOUCHE.

either as trophies, or as forming an integral part of the ornament itself.

A CARTOUCHE is an ornamented shield or tablet, with the edges cut up, perforated and ornamented in various ways, and was developed to an extravagant extent in the later styles of ornament, especially during the French Renaissance.



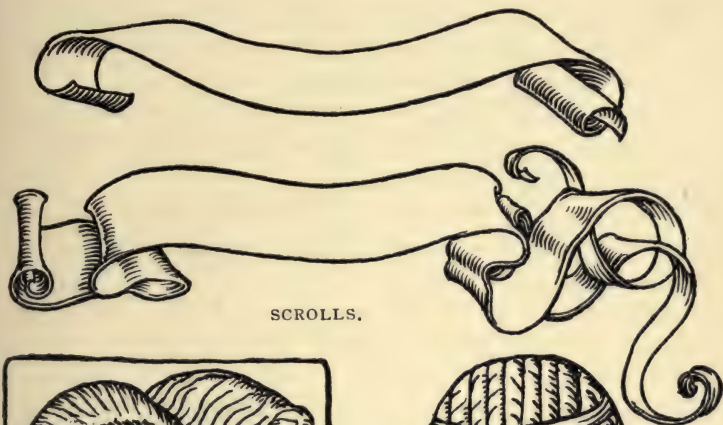
PATERA.



ROSETTES.



SWAGS AND FESTOONS.



SCROLLS.



MASKS.

A **PATERA** is a little button, used to suspend and sustain festoons, trophies, &c., and may be either plain or ornamented, according to requirements.

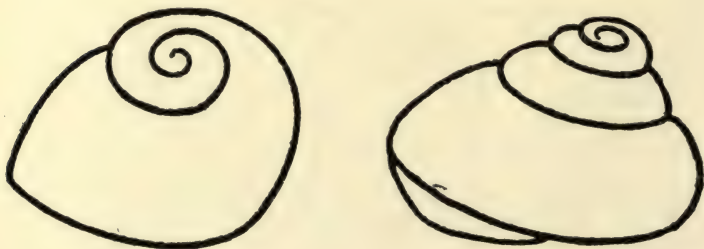
A **ROSETTE** is a larger patera and is more usually made up of leaves rather than floral forms. It plays an important part in all foliated ornament.

SWAGS AND FESTOONS are of various kinds, and are composed of ribbons, reels, beads variously ornamented, leaves, fruit and flowers.

MASKS play a great part in all Renaissance and much classic ornament, and are often grotesque.

LABELS AND SCROLLS are of great variety, and are used for inscriptions, &c. Good examples of ornamental scrolls are to be found in Hans Burgkmair's "Triumphs of Maximillian."

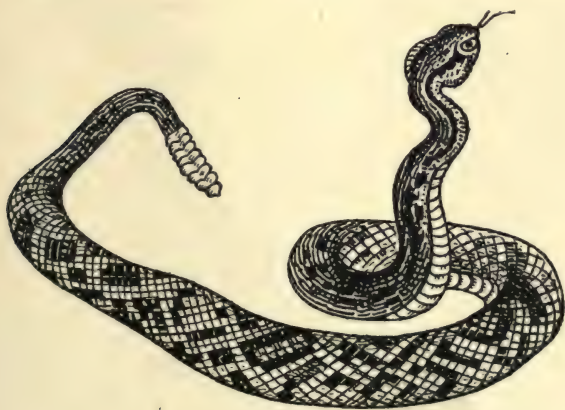
SPIRALS.—The spiral or scroll is one of the most important elements of decoration, and the leading motive of some of the most beautiful ornament. It has its origin in natural forms, and is seen to perfection in the convolution of shells. It is also remarkably well illustrated in the ram's horn and horns of other animals, which often form true spirals, as in the case of the



koodoo and many African and other fauna ; in snakes ;



in the tendrils of plants; in the intertwining of climbing plants, and in plant growth generally; in wave form and



the eddies of water; in the tresses of human hair; and in the curling of smoke from a fire.

In art, the earliest known example of the spiral is that on an Egyptian scarab of the 5th dynasty, in which the spiral is used to enclose an inscription or hieroglyph.

It will be observed that the lines are interrupted at each spiral. This is the case in a large number of scarab



spirals (1). The next illustration is a continuous spiral with a hieroglyph on either side (2).

Fig. 3 shows the spiral considerably developed, and is a very good instance of the detached or interrupted spiral.

In the fourth illustration the spiral is combined with the lotus, a continuous coil with flowers and buds in the spaces.



1.



2.



3.



4.

In the first scarab work, however, the spiral is a single continuous line forming the whole pattern, the line being made endless. Fig. 2 is a simple example.

The Egyptians showed an inexhaustible fertility of invention in the designing of these spirals, the variety being practically unlimited. It will be noticed that even at this early time, 3000 or 4000 B.C., the principle of *even distribution* is observed.

In connection with these scarab spirals it is interesting



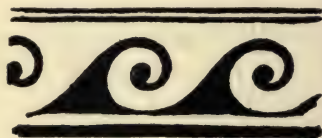
FROM FRONTISPIECE OF EPISTLE OF
JEROME, "BOOK OF DURROW."—
CELTIC, ABOUT 550 A.D.

to note that patterns almost identical with these occur in the earlier Scandinavian bronze age (about 1000 B.C.); indeed, spirals play a very important part, both in Scandinavian and Celtic ornamentation.

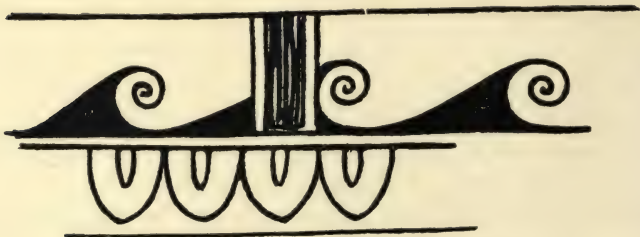
The next illustration is the Egyptian wave scroll (1), together with the Greek modification of it (2).



1.



2.



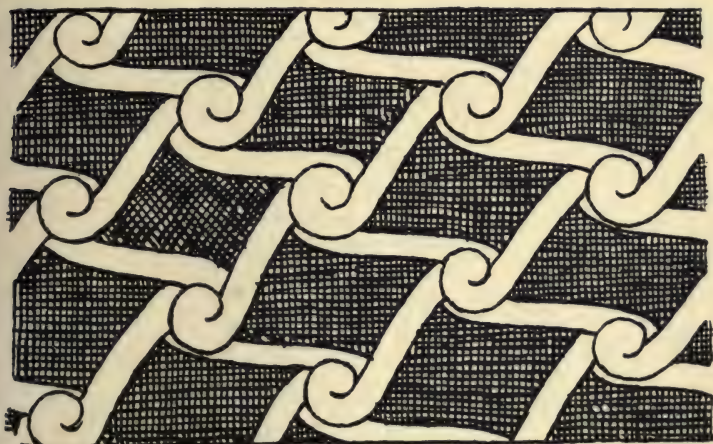
3.



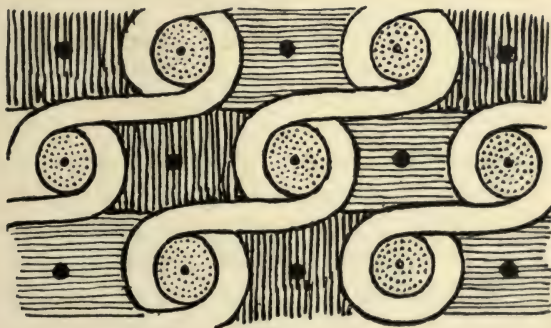
4.



1.



2.

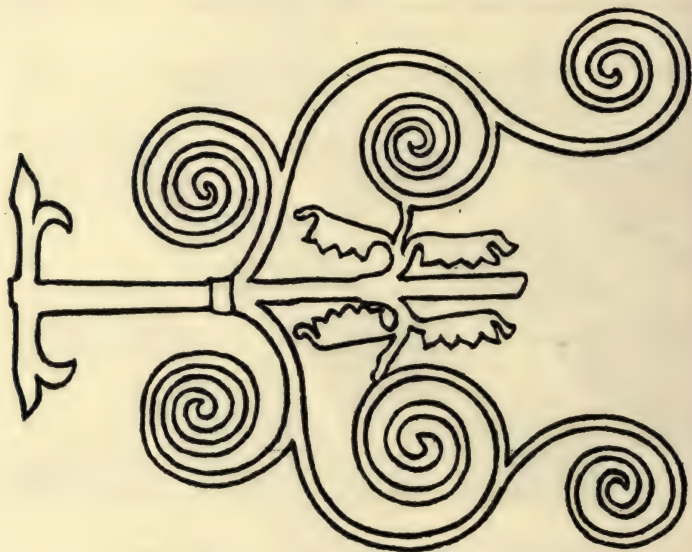


3.

EGYPTIAN SPIRALS.

Again we note the same idea occurring to peoples widely separate, the next figure(3) being taken from ancient Mexican pottery, the wave form being crossed at intervals by bands, and a leaf border added below.

Another motive in Egyptian borders (4) is a kind of spiral or wave pattern, starting from a series of small



HINGE FROM ST. ALBANS ABBEY.

circles, with a little leaf attached to the lower edge; this merges into the *guilloche*.

The Egyptians developed the spiral in another direction, as a continuous decoration for wall and ceiling surfaces, also for textiles. The continuous coil pattern (1) forms part of the decoration in relief on a column, the intervening spaces being filled in with two colours alternately for contrast. A simpler arrangement on the

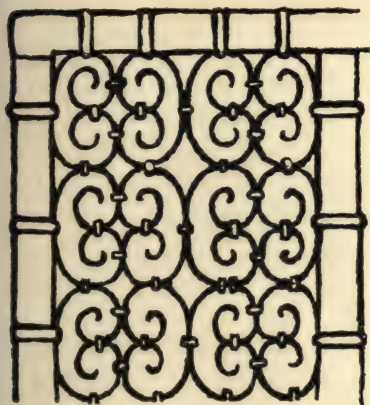
same principle, the plan being rhombic instead of square, is shown (2), and a chequered pattern for cloths (3).

Perhaps the most perfect example of the spiral in ornament is that of the capital of the Greek Ionic column (see Illustration, Ionic order), in which the front and back faces of the cushion of the cap take the form of large volutes, reaching below the bottom of the capital, forming true shell spirals.

The four ears of the Corinthian cap also take the form

of spirals and serve as a very good contrast to the foliated work round the bell of the capital (see Illustration, Greek Corinthian order, page 23). In the Roman order the volutes form a still stronger contrast to the foliated work below.

The spiral form plays an important part in decorative ironwork, owing to its adaptability



to the working of wrought-iron, a number of grilles, hinges of doors, &c., being made up entirely of ornament based on the spiral. The illustration given above is a portion of the choir grille in Lincoln Cathedral, in which the unit is a modification of the letter *e*, and the same reversed.

An interesting example of the spiral in ironwork is the fine hinges from St. Albans Abbey, now in the South Kensington Museum, which consists of six true spirals springing from a main stem, with four curious serrated leaves in the centre.

THE LAWS AND PRINCIPLES OF ORNAMENT.

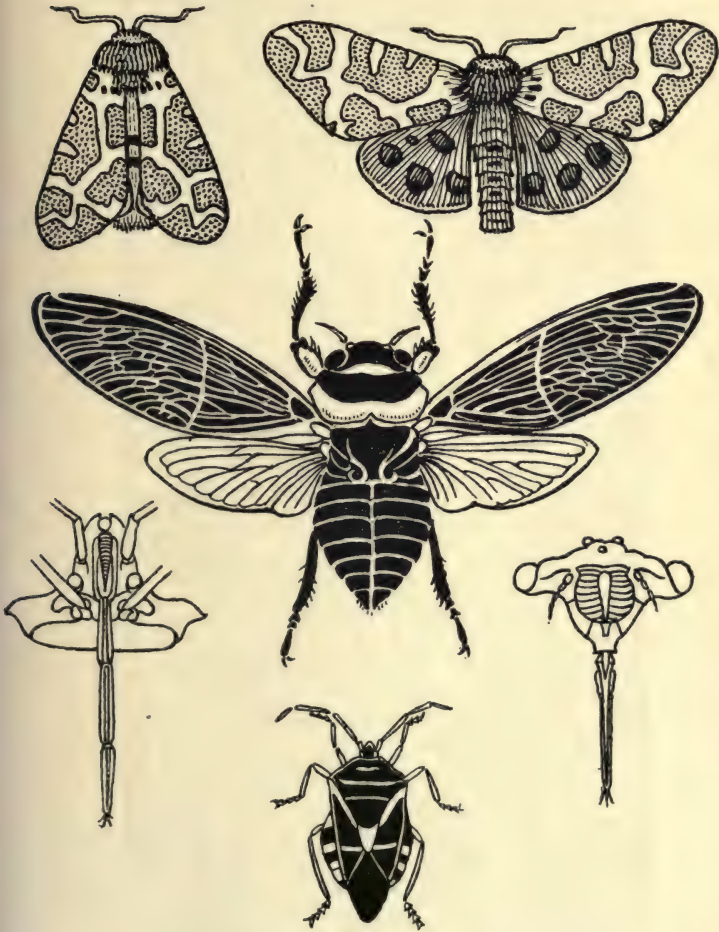
SYMMETRY AND BALANCE.—Symmetry is the harmony produced by the repetition or doubling over of any form on its axis. Balance is the *impression* of similar harmony in the arrangement of dissimilar forms.

Symmetry is the symbol of unity and order. It induces dignity of style. It is a characteristic feature of all early art. Most Renaissance panels, and the panels of pilasters, are designed on symmetrical lines. It is the leading principle in classic architecture, and even in Gothic, although less obvious, it is an almost universal law.

The experiment which painters make of putting the scrapings of their palette upon notepaper, or even the common experiment of writing one's name in ink and doubling it over, is an example of the ornamental value of doubling.

The calyx and petals of most flowers are symmetrical, and the setting of the leaves on the stem in such plants as the olive, the wild rose, the sweet pea and many others are absolutely symmetrical. Throughout the whole order of nature each individual unit is composed of two parts which balance and answer each other, the wings and general form of birds and insects, the form of animals from the lowest in the natural scale to the highest form which is known to us—the human face and figure. The want of symmetry in the individual human limbs is restored by their repetition.

The two eyes of the human face are a striking example of symmetry. An eye is not symmetrical of itself like



SYMMETRY IN NATURAL FORM.

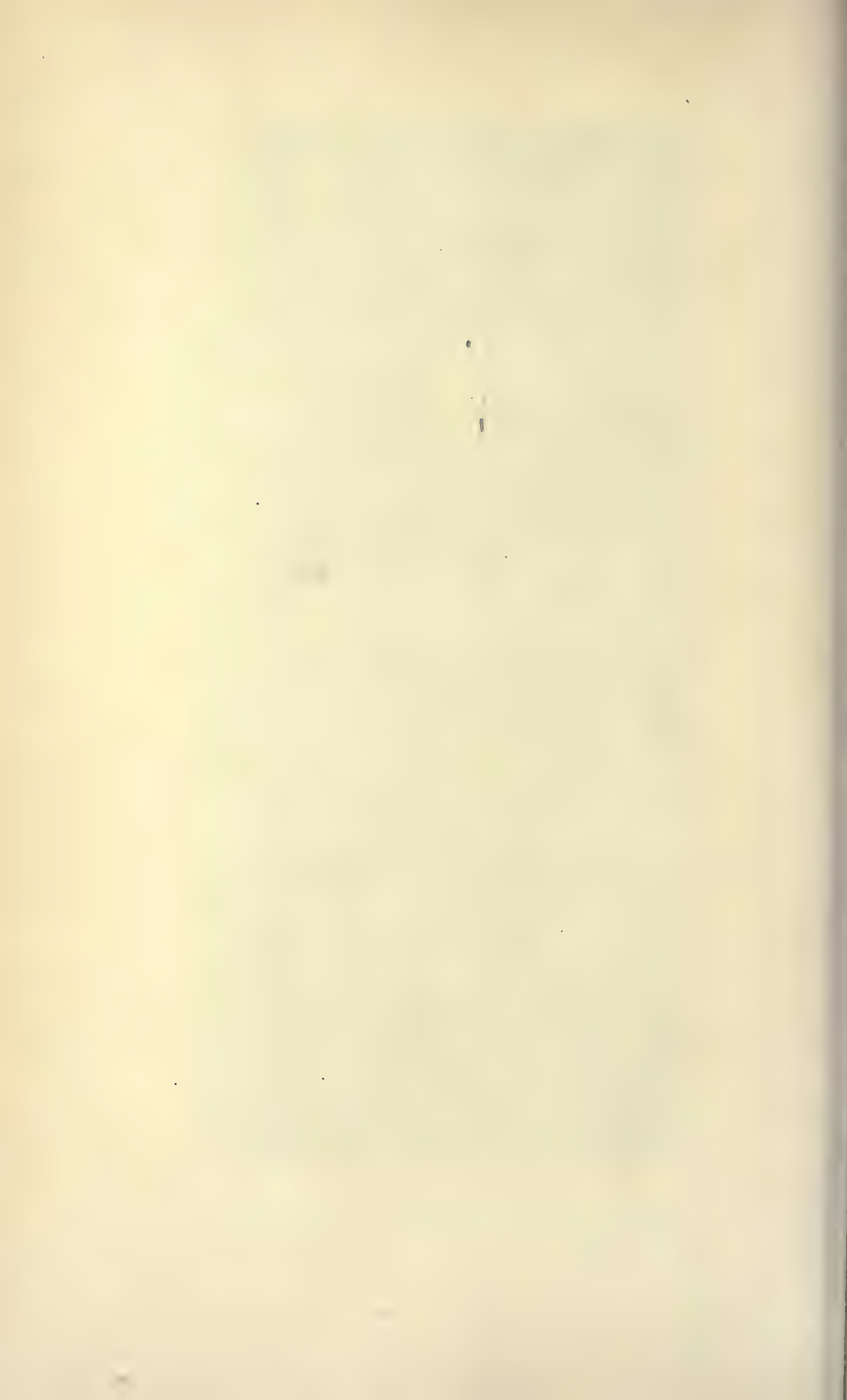


SYMMETRY IN ORNAMENT.

INTARSIA, STA. MARIA NOVELLA, FLORENCE.



CARTOON FOR ALTAR-PIECE, BY G. WOOLLISCROFT
RHEAD.—EXAMPLE OF SYMMETRY AND BALANCE
IN FIGURE DECORATION.



the shape of an almond, but a wonderful combination of unsymmetrical and subtle curves, requiring its complement on the other side of the face, which at once produces symmetry and balance.

The eye of the Cyclops, which is a single unsymmetrical human eye planked down in the middle of the forehead to serve as a centre-piece, without any regard to the bony structure, and with no bony prominences to serve as protection, may be cited as an example of bad design and of extreme poverty of invention on the part of the human product as compared with the great designer Nature.

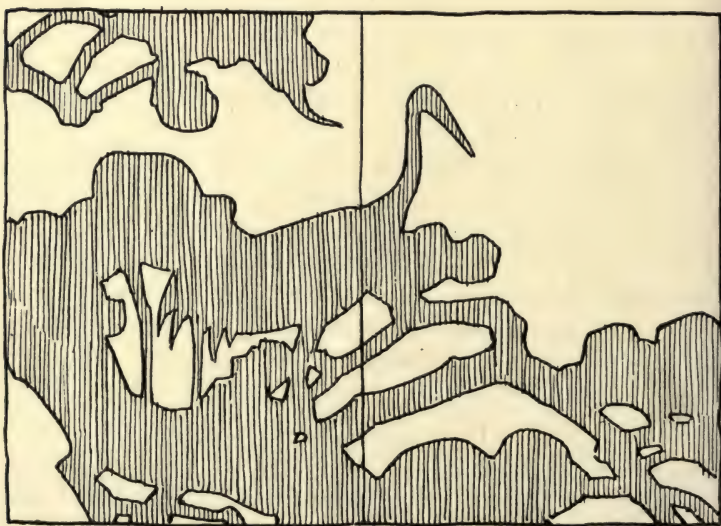
Balance may be seen exemplified in trees, in which, although the individual branches are unsymmetrical, the general bulk is the same, and balance is preserved. The same may be said of individual leaf forms, which are never absolutely symmetrical, but the two sides of which produce the *impression* of symmetry.

In ornament the two sides of a panel may be made up of different forms, so long as the ornamental balance, or value, is preserved.

For further examples of symmetry the illustrations of Ionic and Corinthian capitals may be referred to. In the insect figured on page 119, which belongs to the order known as Hemiptera, it will be seen that not only is the general arrangement symmetrical, but the structural details, of which diagrams are given, are also formed on absolutely symmetrical lines.

PROPORTION AND SPACING.

“PROPORTION” is the harmonious relation of the different parts of a composition. “Spacing” is the harmonious distribution of forms in a given space.



DIAGRAMS OF THE "SPACING" OF JAPANESE NATURALISTIC DECORATION, SHOWING THE PROPORTION OF THE SUBJECT TO THE BACKGROUND.



PROPORTION AND SPACING IN JAPANESE NATURALISTIC DECORATION.

Proportion and spacing are very much a matter of individual feeling and power, but are nevertheless subject to well-defined rules and laws. Certain spaces or quantities are found to be harmonious and grateful, and others not. In classic architecture the relation between the capital and the column, or between column and pediment, has become a fixed law, to be arrived at by actual measurement. The same may be said of the proportions of the human figure. A figure six heads high is found to be stumpy, and wanting in dignity.

The proportioning of wall spaces has already been referred to and illustrated in the earlier portion of this work, under the head of "Wall Coverings." The same principle applies to the setting out of any space for decoration. In the printed page, for example, of any fine book, the type or illustration, as the case may be, is always set well up on the page, leaving the widest margin at the bottom, and each of the marginal sides generally vary. In a printed engraving, also, the widest margin is at the bottom. If the margins were equal all round the lower margin would *appear* smaller. It is a matter of optics.

In the same way a painted portrait is always placed high in the picture; if it be placed low it looks mean.

Japanese naturalistic decoration is spaced on the pictorial principle, and the law of even distribution is not observed. It is a very common error, shared by some quite distinguished designers, to suppose that Japanese design is placed *anywhere*, "a big flower or a fish just where they happen to come." It was quite deliberate, however. The system is always the same—*i.e.*, a principal mass, which holds the attention, one, two, or three subsidiary masses, and the rest plain spaces. The spaces,

moreover, are as carefully considered as the masses. Let him who thinks that Japanese design is "placed anywhere," try to re-arrange the subject which is illustrated, of a wild fowl being caught in a trap formed of a kind of crossbow, and see if he can improve on it in the matter of proportion.

SUBORDINATION AND SUPERPOSITION.

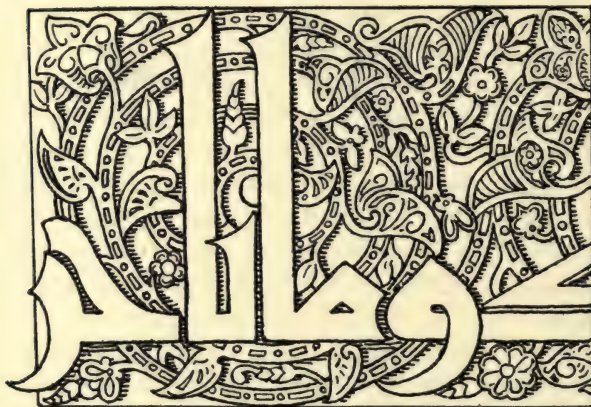
Subordination is the making of one part of a work subservient to another, with the object of emphasising the principal motive, and also enriching it by contrast, as in the accompaniment to a song, which is a very good instance of subordination. Every work of art, whether it be architecture, painting, story, or musical composition, should recognise the primary importance of constructive elements. In a musical composition, for example, whether it be solo, duo, trio, quartetto, or symphony, there is always a first subject, which is interwoven with one or two subsidiary motives, and it is this which gives it form, contrast, and leading interest.

In an architectural composition, any ornament which is introduced should be made subservient to the leading structural idea, and should not overpower it. The same principle holds good in any article of general use. Ornament is the means to an end and not the end itself. Subordination is also the frank recognition of the limitations of the material or method employed. An object should be ornamented with due regard to suitability to its use.

Superposition is a similar law to that of subordination, but with a difference. Superposition means the imposing of one ornamental motive over another less important motive, which is necessarily subordinated to the principal one. Perhaps the most characteristic examples



SUBORDINATION (ILLUMINATED MS.).



SUPERPOSITION (SARACENIC).



SUPERPOSITION (JAPANESE).

of this law are to be found in Saracenic ornament, in which mnemonic inscription is superimposed upon a field of lighter and less obtrusive work. It is a common device in the designing of wallpapers, textiles, and many all-over patterns. It is frequently seen in Chinese and Japanese ornament, in which semi-naturalistic ornament is superimposed upon a more or less geometric diaper or "field."

REPOSE.

Repose is the result of fitness, proportion, and harmony, and may be said to be a *quality* rather than a principle or law. Its opposite is unrest and movement. It is a quality which is, or should be, common to all art in a greater or lesser degree. If the details or parts of a work are obtrusive and force themselves upon one's notice unpleasantly, we say that the work is *busy* and lacks repose. The subject, character and general purpose of a work determines its treatment. If one were illustrating such a subject as, for example, "The Rape of the Sabine Women," one would scarcely represent the figures as if they were all going to sleep. The energy of the men, the struggles and gesticulations of the women, the general situation, in fact, would make action, and *violent* action, a necessity. At the same time, the most violent action is not incompatible with a sense of repose in its treatment, which depends upon the harmonious blending of the various qualities which are represented by that little word *Art*. The lights and shadows should take their proper place in the picture. There should be a leading incident, which should hold the attention, and any minor incident which is introduced should be made subservient to the leading motive or idea, so as not to distract. Precisely the same thing holds good in architecture, sculpture or ornament.

The general tendency of art is from severity and reposeful dignity in the early periods to a greater freedom and movement in the later. Repose is the leading quality in all Egyptian art, and most Greek. All Early Christian art was devoted to the service of religion, and a sense of repose is essential to the religious idea.

Examples: The Doric order of architecture as contrasted with any of the later orders, and especially the springing of its fluted column with its broad base, directly from the stylobate or steps. The general treatment of the frieze of the Parthenon.

Simplicity may be said to be one of the chief elements of repose. If the quality could be reduced to a formula, the straight line would represent repose, and the curved or spiral line the absence of it.

Examples of the absence of repose: The whole of the works of Bernini.

CONGRUITY.

This implies a general consistence in the relation of each part of an object or work, or between the complete work and its surroundings.

An example of *incongruity* would be to introduce Corinthian caps to a building of such severe simplicity as that of, say, the Parthenon, or to put a rustic porch to any classic building. Such proceedings would at once be felt to be anachronisms. The incongruous in ornament was perhaps most apparent during the break up of the Renaissance in the latter part of the 16th century, beginning with the crowd of men who followed Raphael. As an example of grotesque *incongruity* a portion of one of

the painted pilasters in the Loggia of the Vatican, produced under the direction of Raphael, is given. A mere



ARABESQUE, FROM THE
LOGGIA OF THE
VATICAN, ROME.

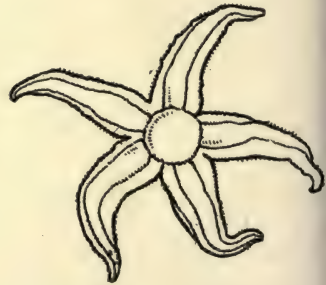
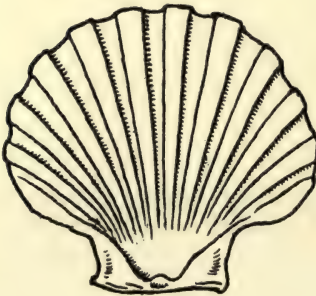
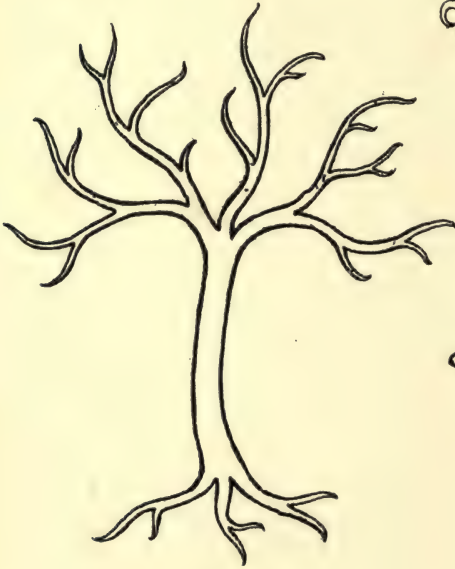
EXAMPLE OF INCONGRUITY.

description of this panel will suffice to show to what depths of banality such a man as Raphael could occasionally descend. Commencing at the top, two gigantic amorini, the largest figures in the panel, are poised upon attenuated spiral volutes, and appear to be tickling or fanning four lions' heads which form the terminal points of the frame of a small cameo representing a boar. Below is a larger cameo (representing two equestrian travellers), supported by a pair of one-armed fauns, who are perched upon a third cameo of a classical subject of minute figures of amorini. From the frame of this cameo is suspended a huge necklace, apparently of emeralds in a setting of gold. Below is a fourth cameo of a nondescript female figure representing nothing in particular, flanked on either side by female terminal winged figures holding up objects which appear to be a cross between a scorpion and a crab. When it is stated that

such a panel as this appears in the company of realistic renderings of the objects of natural history, together with representations of the various

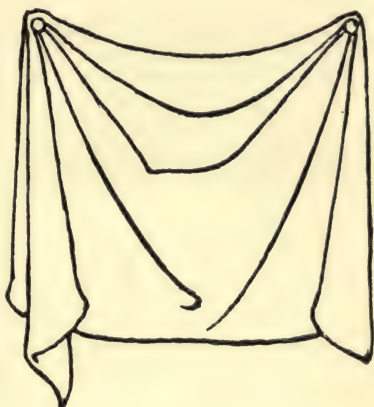


FROM DÜRER'S
"APOCALYPSE."



EXAMPLES OF RADIATION.

Christian symbols, it will be seen at once that the utmost limit of incongruity and confusion of idea is here reached.

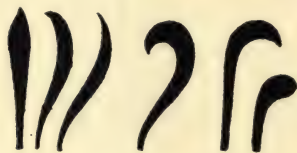


RADIATION IN FLORAL FORM AND DRAPERY.

It should in justice be stated that the Arabesques of the Vatican display the greatest skill of handling, and brilliance in their execution.

RADIATION.

Radiation is the spreading out or divergence of lines or forms from a point or common origin. It is a principle



RADIATION IN ORNAMENT.

which is almost universal in nature. The most obvious instance is that of the sun's rays. It is also seen in trees, in which both branches and roots radiate from a parent

stem or trunk; in the digits of the human hand; in the scallop shell; in the star-fish; in the petals of flowers, the vein structure of leaves, and in plant growth generally. It is also the leading principle of drapery folds. The completest and simplest expression of this law in ornament is to be found in the Greek anthemion, in which the lobes spring from the junction of the two volutes and radiate from that point.

The beauty of an anthemion consists in the rhythmical harmony of all its parts, and it is perhaps the most perfect example of purely abstract ornament in existence. It is supposed to have been suggested by the honeysuckle, but, as a matter of fact, it bears only the faintest resemblance to the natural flower, and the probability is "it was an after-recognition rather than the flower should ever have served as a model." Owen Jones thinks it more probable that the various forms of the Greek flower were generated by the brush of the painter according as the hand is turned upwards or downwards. (See illustration, page 132.)

The law of radiation plays an important part in all ornament, and it is the most usual, because the most satisfactory principle, in the setting out of Majolica plates.

TANGENTIAL JUNCTION AND GROWTH.

Tangential junction is intimately associated with the laws of radiation and growth, and is the law which is universally observed in nature in the springing of the branches and leaves from a parent stem, in the ribbing or veining of the leaves themselves, and in the setting of the flowers on the stem.

In ornament, the adoption of the principle of a continuous stem, throwing off branches on either side in

Byzantine work, constituted a new development, and opened up possibilities which were afterwards taken the fullest advantage of by the Gothic designers. It was in



TANGENTIAL JUNCTION AND GROWTH.

fact a movement in the direction of naturalism, so far as structural growth is concerned, although the actual forms were in many instances purely conventional.

One of the many lessons which we learn from the study of natural growth is that the stem increases in thickness in proportion to the weight that it carries, and becomes more slender as the weight decreases. This principle of tapering is one of the essential beauties of foliage, and is observable throughout nature. This law is observed in all good ornament of a constructive character. In continuous scroll-work, however, the principle of tapering is not observed, indeed is not even desirable, as it is a mere ornamental repetition, and every portion is in itself complete.

In Gothic, and also in a good deal of Eastern ornament, continuity is often ignored, the ornament stopping off and commencing again at will, the designers being content in observing the principle of even distribution, and the effect looking right. Some form of constructional growth is, however, a *sine quâ non* in all good ornament.

CONTRAST, INCLUDING INTERCHANGE AND COUNTERCHANGE.

Contrast both in form and colour is the effect produced by the juxtaposition of two opposing elements, as the straight line to the circle, light to shade, plain spaces to those ornamented.

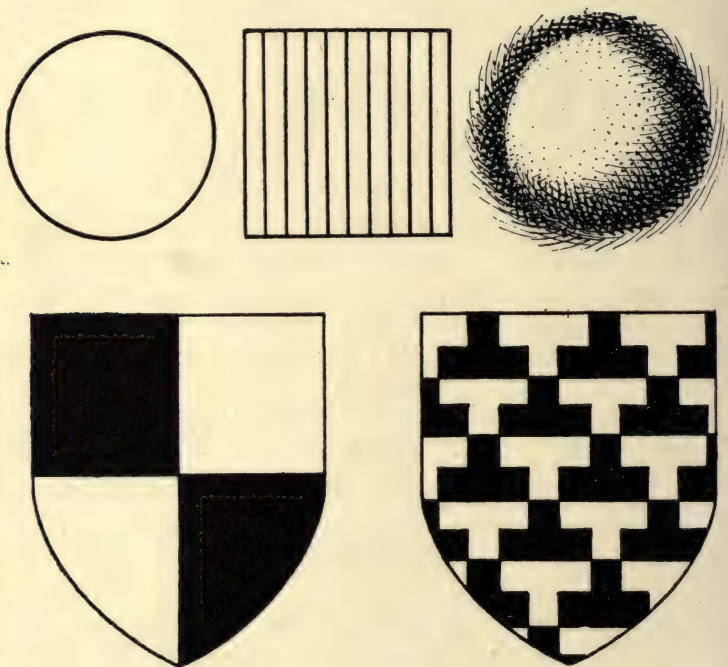
Nature presents to us an endless succession of contrasts, as day to night, land to water, the flower to the leaf, summer to winter, youth to age, man to woman, and that last and most impressive of all contrasts—life to death.

It is seen in the markings of animals, in the striping of the zebra and tiger, in the spots of the leopard; it is also seen in the beautiful colour patternings of insects, the plumage of birds, and the colours of flowers.

In the form and action of the human figure contrast is also seen, although the contrasts are far more subtle, while

the colour of the hair and beard imparts interest to the face and intensifies the value of the flesh.

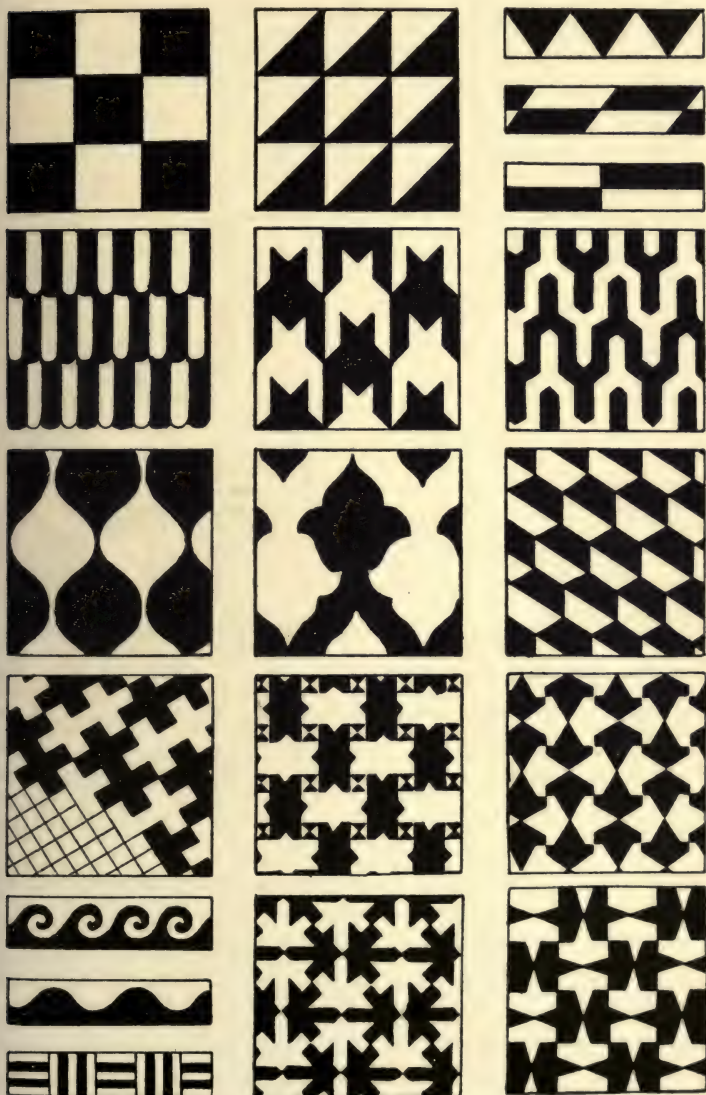
Contrast pervades all art, as it does all nature; without it, art would lose its freshness and savour, and become a



CONTRAST.

monotony. In architecture it is seen in the doors and windows, which are contrasted with the plain spaces; in the spire and dome contrasted with the body of the church; in the rich mouldings; and in the elaborate capital contrasted to the plain shaft.

The most obvious example of contrast in relief ornament is in the well-known egg-and-tongue moulding, in which the



EXAMPLES OF COUNTERCHANGE.

perfectly plain figure of the egg is contrasted with the incised ornament around it and with the straight line of the tongue.

The pipey folds of Greek sculpture are made to contrast with the rounder form of the figure, and this pipey quality is emphasised in order to give value to the flesh. In the same way the hair in fine sculpture is always broken up in decorative masses, as the absence of colour renders this treatment a necessity.

Interchange is the dividing up equally of horizontal or vertical patterns, the colour of the ornament and ground on one side of its axis being the opposite or reverse to that of the other. See Illustration.

Counterchange is reversal of effect; the patterns are so designed that the ornament is the exact counterpart of the ground. The simplest illustration is that of a chess board.

Counterchange is a very obvious and striking form of contrast and is common in the ornament of savage tribes; in Moresque, Saracenic, and other work; and it is found in all forms of inlay. A number of examples are given.



INTERCHANGE.

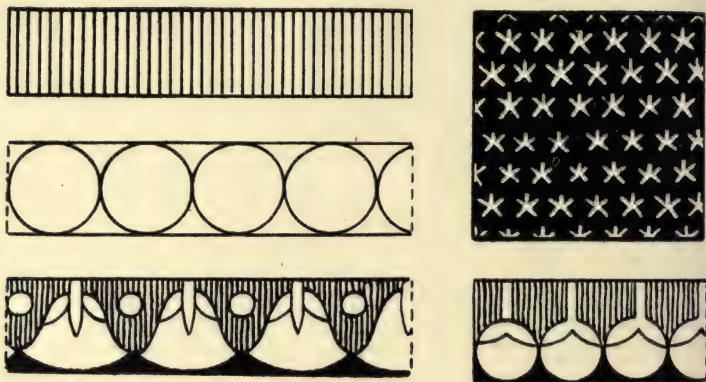
UNITY.

By unity is implied the coherence and completeness of form and idea, and the co-operation of all the parts of a piece of ornament or decorative scheme.

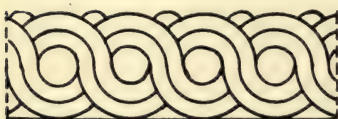
Unity of conception, idea, and treatment, is essential to the dignity of a work of art. As an example of unity, the building which has been several times referred to in these pages—the Parthenon at Athens, may be cited, the

ornamental embellishments being in perfect accord with the general character of the structure.

For a further example, the remarkable 14th century incised monumental slab (p. 84) may also be cited. Indeed, this work would serve to illustrate almost every law of ornament which exists. It illustrates symmetry and balance in its general arrangement; perfect proportion in the figure itself, and in the relation of the figure to its accessories; subordination in the general treatment of the smaller figures and their architectural framework; repose in its quiet, unobtrusive dignity; congruity in its general consistency of idea and treatment, and the absence of any incongruous elements; contrast in the black head-dress with the lines of the face, and in the severely simple lines of the lower portion of the drapery, as against the rich diapered ornament and the dark background, which latter is artfully emphasised in the lower portion in order to afford a still stronger contrast with the plain portions of the drapery; repetition and series in the smaller figures; even distribution absolutely observed in the general treatment of the whole; composition of line in the folds and arrangement of the drapery; growth, in the continuity of the design, the rose and the vine springing from the head and tail of the monster upon which the figure stands, thus establishing a relationship between the figure and its accessories. Added to this, perfect suitability to its use, and complete observance of the limitations of the material in which it is executed, the effect being obtained by pure line only, with the addition of full black. It is symbolic throughout, both in the figures and their accessories. It is mnemonic in the inscription which forms the border. It is necessarily æsthetic from the union of these several qualities. An admirable work!



SIMPLE REPETITION.



REPETITION AND RHYTHM.



ALTERNATION.



ALTERNATION.



SERIES (IN THE PANELS).

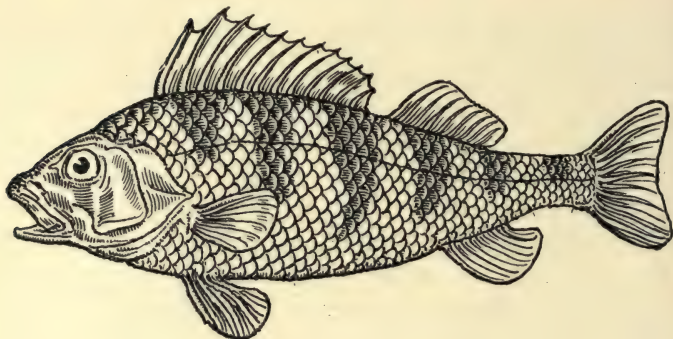
REPETITION AND RHYTHM, INCLUDING SERIES.

Repetition is a succession of similar decorative units in any direction, as I. I. I. I. Rhythm is the recurrence of a sequence of units in a definite and harmonious arrangement, as 1.2., 1.2., 1.2., 1.2. Series is a succession of different forms, as 1.2.3.4.5.6.7.8. Simple forms are better adapted for repetition than complex ones. The more organic a form is, and the more closely it approaches natural form, the less it will bear repetition.

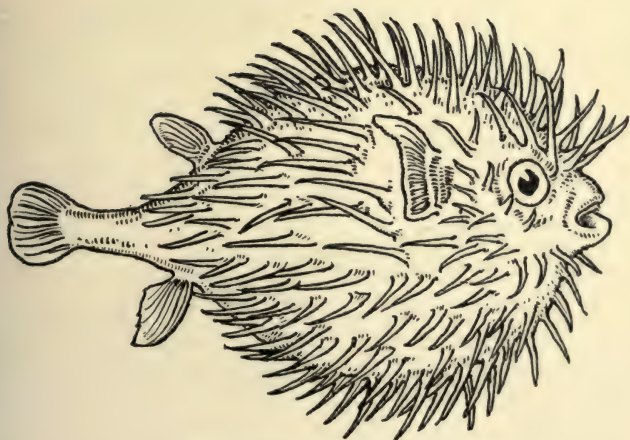
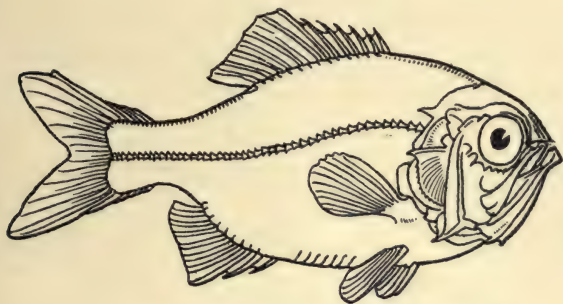
Similarly in architecture the principle of recurring lines is more marked in the Doric order than in any of the succeeding ones, and this is only possible by reason of the extreme simplicity of the style. It is a *necessity*, in fact.

EVEN DISTRIBUTION.

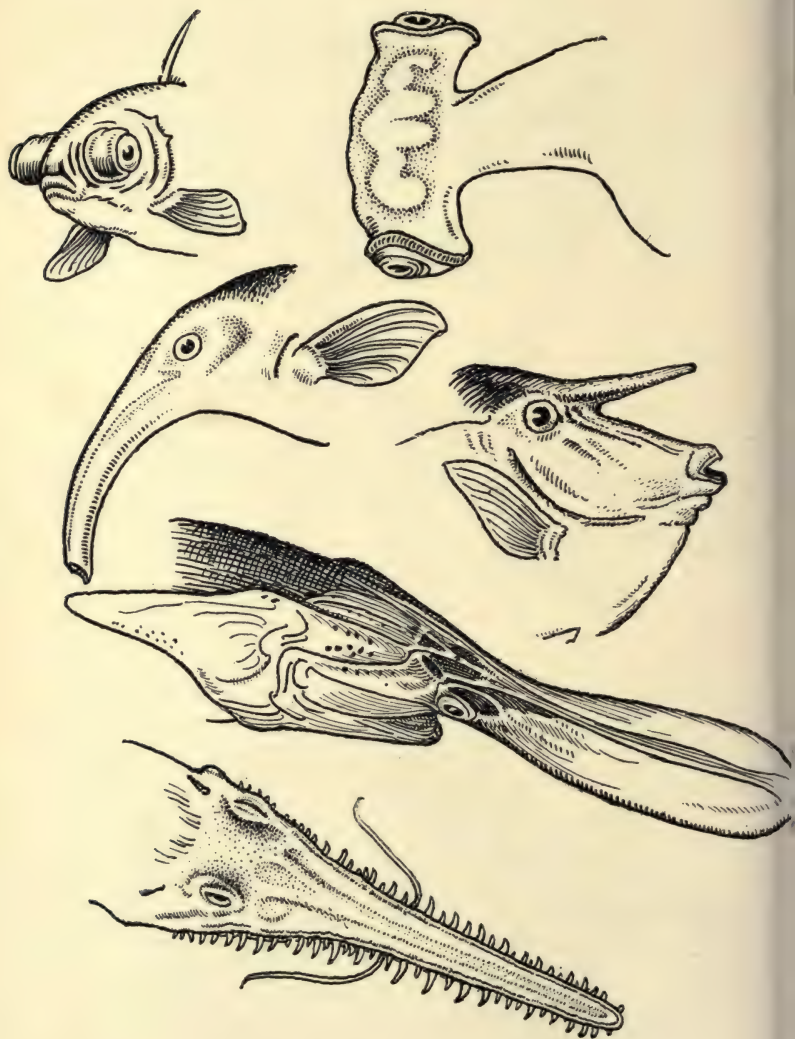
This is a universal law in ornament, and in the ornamentation of any given space it is absolutely necessary that this law be observed. All ornamental borders, the setting out of pilasters, diapers, &c., and even the general arrangement of architectural masses, are designed on this principle. The simple experiment of designing any ornamental border will be sufficient to convince any one of the necessity of observing this law. So long as any space remains unaccounted for, the whole thing remains out of tune. The moment the space is filled the thing looks right, even though the design should be unsatisfactory in other respects. A certain degree of contrast is, however, a necessity, in order to prevent monotony. The most obvious example of this law which is given, is the decorated page from the "Gesta Petri Mocenici of Cepio," p. 93. The two shields at the bottom form a pleasant contrast to the close filling of the border, and serve as a



DEVELOPMENT IN NATURAL FORM.



DEVELOPMENT IN NATURAL FORM.



DEVELOPMENT IN NATURAL FORM.

point for the leading lines of the ornament to spring from. The principle holds good in figure decoration no less than in ornament. The frieze of the Parthenon may be cited as a remarkable example of this law.

DEVELOPMENT.

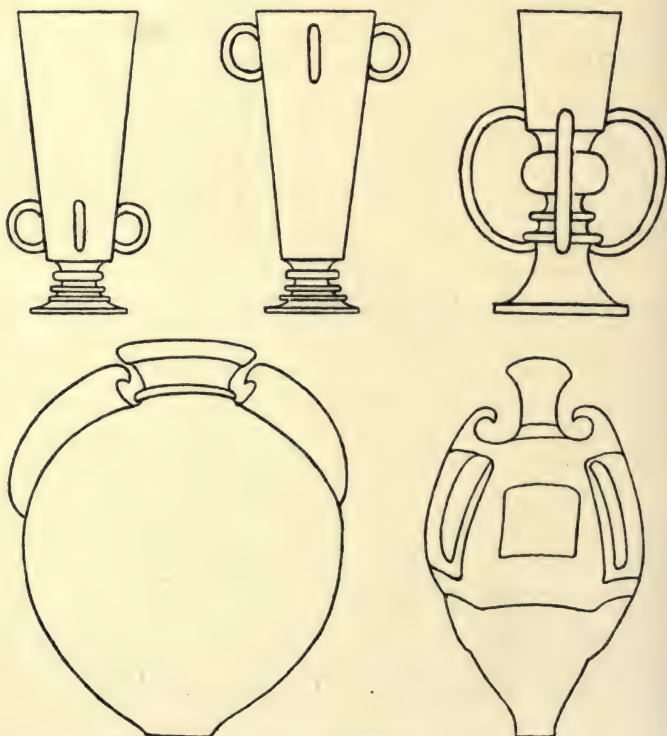
This is the principle or law which in the domain of natural philosophy is associated with the name of Darwin, who formulated the theory that the almost endless variety of forms in nature is the outcome of a few primal types developed in accordance with necessity and environment, which theory is now universally accepted by students of natural science. In art, however, it is a definite principle. Throughout the whole domain of nature we see objects apparently totally dissimilar, and which nevertheless have rudiments of construction which proclaim their common origin. The construction of the petals of the Sturt pea, given on p. 171 as an example of the grotesque, is precisely the same as that of the common garden pea, and yet it possesses no apparent resemblance.

The principle when once perceived becomes so obvious as to seem almost absurd.

To commence with fishes, as an illustration of the principle. If we take the perch as the typical form of fish, and as the central and most familiar type, we shall find the principle of development carried to its utmost limits; in the direction of length and attenuation, to pike and sturgeon, on to ribbon fishes, lampreys and eels; in the direction of bulk, to wrasses and globe fish; in the direction of flatness, to skate, flounders and soles. Besides the development of the general form, the various parts of fishes are developed on a similar principle. The eye, in the telescope fish and hammer-headed shark;

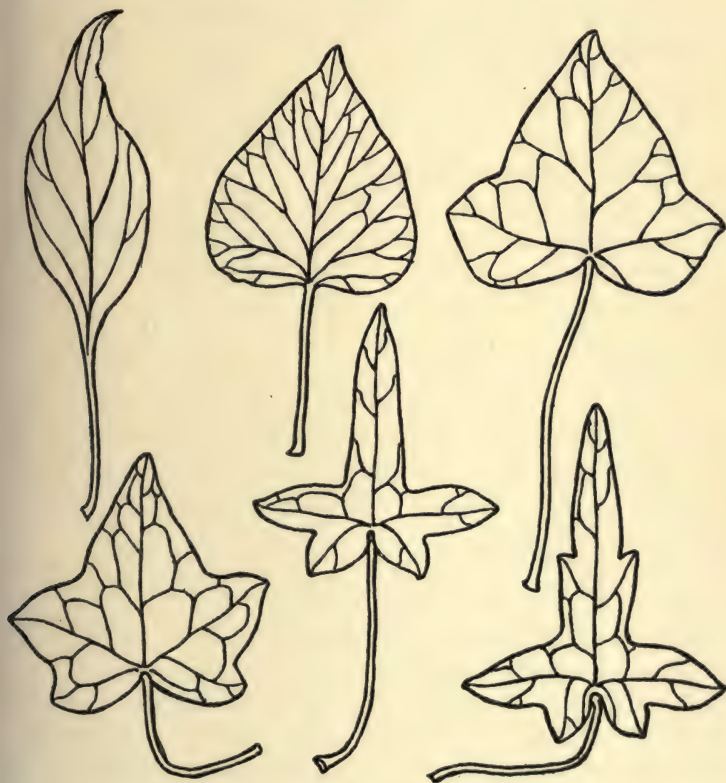


TERRA-COTTA GOBLETS.—THE HOMERIC “AMPHIKYPELLA”
(BRITISH MUSEUM).



DEVELOPMENT.

the snout, in Peter's beaked fish, Japanese saw-fish, and spoon-beaked sturgeon; the horn, in the unicorn fish; the fins in gurnards and flying-fish.



DEVELOPMENT IN THE FORMS OF THE IVY LEAF.

It is unnecessary to multiply instances. In each of the great divisions of nature, in quadrupeds, reptiles, birds, insects and plants, the principle is the same; the same reasonableness and order throughout. A visit to any

museum of natural history will confirm the truth of this law.

Precisely the same principle obtains in art, and throughout the whole of art. It is the readiest and most reasonable means of obtaining variety and new forms. A glance at the series of terra-cotta goblets from the Schliemann collection in the British Museum, given on p. 146, will show that the forms are substantially the same; and variety is obtained simply by elongation and attenuation of the body and handle of the goblet. In the two first of the three goblets in the middle of the page the difference is simply in the position of the handles; in the third the foot is developed at the expense of the body of the goblet, the handles placed in the middle, and an entirely new effect produced.

A striking example of development is to be found in the various shapes of the common ivy leaf, from the elongated and heart-shaped leaves to the three-pointed and five-pointed leaves. Seven points are occasionally reached, but this is abnormal.

COMPOSITION OF LINE.

This is the harmonious blending of the leading lines or forms of an object or composition. It is the leading principle of all great art, pictorial or ornamental, and is a universal law in nature. It is seen in the leading features of the landscape, which *compose* with each other and with the horizon; in cloud forms and arrangements; in the blending together of the leaves of trees and of plants; in the wings of birds; and in the form of animals generally. This law, as indeed most other ornamental laws, is seen in the greatest perfection in the lines of the human figure. The hand, for

example, in any position, forms a composition of itself. The direction of the fingers, the lines which the knuckles take, the creases of the palm and fingers, and the general outline, all composing with each other. The same may be said of the lines which the features take, with the general form of the head. The ear, of itself, is a perfect example of composition of line.



COMPOSITION OF LINE.

The lines of the leg and foot, too, lead, as it were, insensibly to the ground and compose with it.

In a composition of figures the leading lines and masses should be the first consideration, together with the expression of the idea. A reference to the sculptured group which forms the frontispiece of this work will almost disclose a new science to those unacquainted with this law. The way in which the two shields compose with each

other, and with the leading lines of the drapery and the general form and position of the limbs, is most admirable. The straight line of the club, too, acts as a foil to the general harmony, and serves to strengthen the composition. Indeed, the value of the straight line in a composition is enormous, and may be compared to the use which such men as Bach, and more especially Schumann and Wagner, make of the discord in music, to enhance the value of the harmonies, and to counteract the insipidity which is the result of a too monotonous grace. As a matter of fact the art of Schumann may be said to be founded upon a system of discords.

The law of composition of line is naturally more obvious in conventional ornament than in a pictorial work, or in nature, but the principle once perceived (and it is only since the general decline of the arts in the 16th century that it has fallen into desuetude), will be seen to be universal.

Ruskin once attempted to analyse the composition of one of Turner's pictures, but without much success. The finest design defies analysis; it is a matter of feeling, and cannot be reduced to a formula.

Composition of line in natural landscape is due to the fact of its being seen in perspective; the landscape seen from a balloon would be like a map.

METHODS OF EXPRESSION AND THE INFLUENCE OF MATERIAL.

THERE are two great divisions or provinces of art—the flat and the round. It would be difficult to say which is the more important of the two; the former, however, is the most extensive. The round, or relief, may be said to partake more or less of a structural character, while the flat is merely ornamental.

These two great divisions depend for their effect upon very different conditions, the flat upon a pleasing arrangement of lines and colour upon a given surface; the round upon the general contour, mass, and the play of light and shade upon the object represented.

The flat includes all painted wall surfaces, mosaic, inlay, stained glass, book decoration, monumental brasses, textiles, wall papers, and the surface decoration of pottery. The round includes all architecture with its various structural and ornamental details, sculpture, bronzes, furniture, jewellery and metal work.

These several arts impose their own special conditions upon the designer or worker. The material of stone or marble calls for a different treatment or handling to that of wood. The soft and pliable clay in the hands of the potter as he manipulates it upon his revolving wheel, insensibly induces certain characteristic forms. The same may be said of the glass which is blown by the glass-blower by means of a tube, the forms of which are influenced at will; and the heated iron which is played upon by the hammer and pincers of the blacksmith.

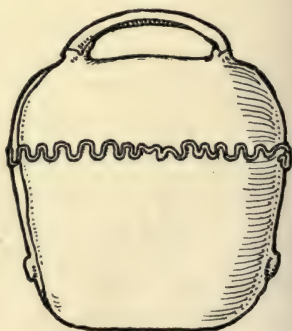
These conditions, imposed by material and method, have always been observed during the best periods of art, and violated proportionately as art has declined. The strong vigorous woodcuts of the early printed books, though often rude and even clumsy in execution, always impart the peculiar *flavour* of the wood, and the decorative relation of the wood block to the printed type is invariably kept.

Suitability to its purpose and use is the first condition of good ornament, and must always be the chief consideration of the designer. A chair or a couch is made to sit or lie upon, a cup to be handled for the purpose of drinking; therefore relief ornament is placed in those positions which do not affect our comfort, or, at least, it is subordinated to the use to which the object is put.

A capital example of suitability to use is in the Swiss cow-bell which hangs from the neck of the cattle which graze upon the Alpine slopes, and which enables the herdsman to locate his charge. If it were of the shape of an ordinary bell it would certainly *look* uncomfortable, and would probably irritate the animal. It is an instance



BRONZE TABLE BELL.



SWISS COW-BELL.

in which considerations of utility have been the means of developing a very characteristic form.

We have experienced, within the last two decades, a very hopeful change in the direction of *simplicity*, both as regards structural form and ornamental embellishment. The vulgar ornamentation for *the sake of ornamentation* is gradually disappearing, and more attention is being paid to beauty of proportion and refinement of form. This salutary change is especially noticeable in domestic architecture, but it is extending also to furniture and to the various articles of daily use. It is, of course, quite possible to push the principle of simplicity to a ridiculous extreme, and no doubt in many individual instances this is precisely what has been done. Such extremes are inevitable in any reaction or in any new departure; there is a point at which simplicity borders on bareness and monotony, but, upon the whole, the change is in the right direction, and distinctly to the good. The service which is rendered by such a movement or reaction is in emphasising the fact that ornament, of itself, can have no independent existence; that it only exists for the embellishment of an object; that "it is essentially the accessory to, and not the substitute of, the useful"; and that it must be made subservient to the thing which is ornamented.

Suitability to use or purpose and a recognition of the limitations of material and method were cardinal principles of all old art, and, so far from citing instances in which these conditions were observed, it would be difficult to give instances of their violation. It is only during recent times, and especially during the darkness (decoratively speaking) of the mid-nineteenth century, that we find these conditions ignored. This state of things was

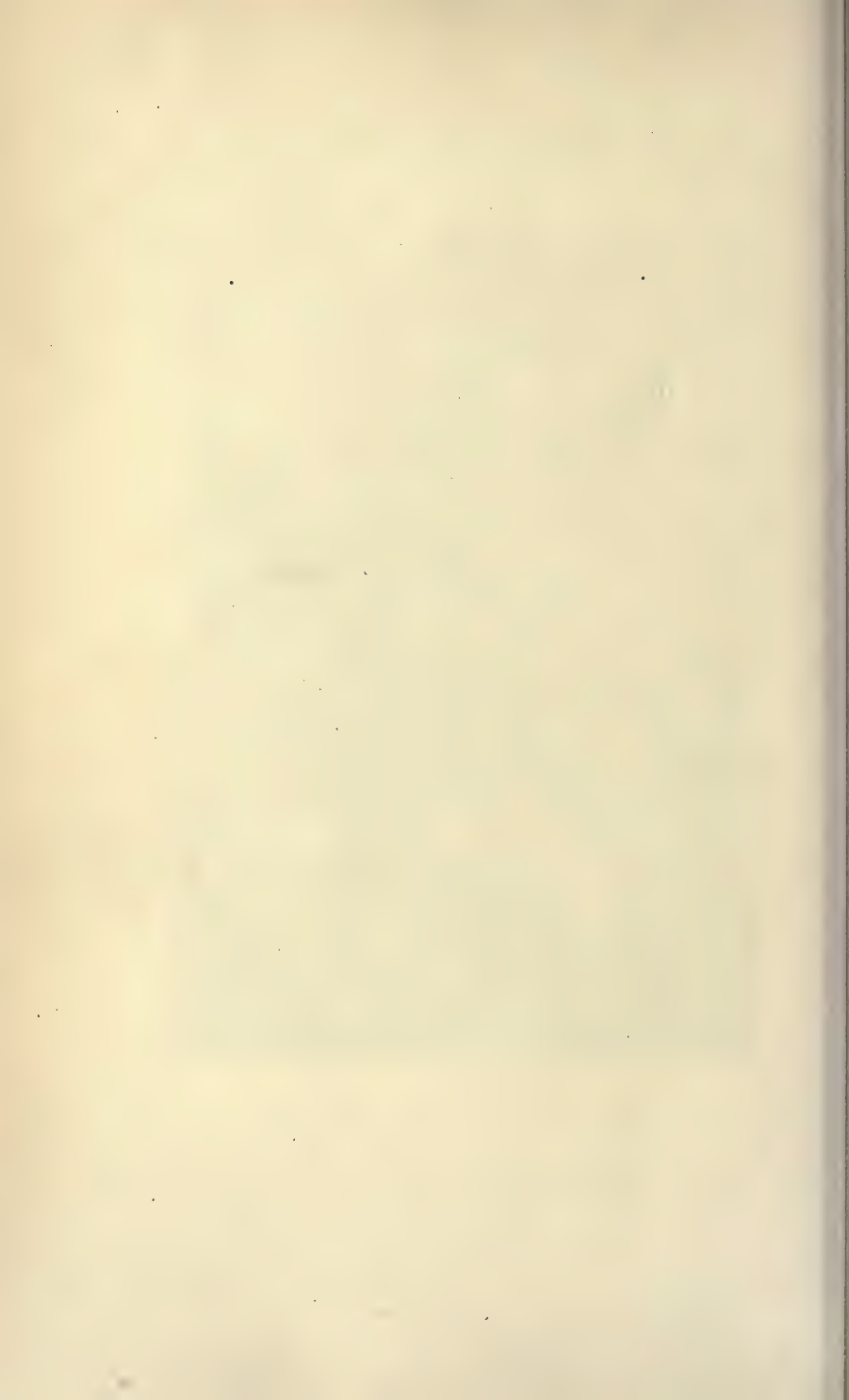
brought about, first, by the complete decline of tradition ; and, secondly, by an almost universal craving for mere novelty.

Two notable instances may be mentioned in which both the limitations and the possibilities of material and method were completely misunderstood. The first is Sir Joshua Reynolds, who once essayed the designing of a stained-glass window, and applied to it the pictorial principles with which we are familiar in his painted subjects. The result was a lamentable failure ; it was impossible that it should be otherwise. The second instance is that of Sir Edwin Landseer, whose treatment of the bronze lions in Trafalgar Square is not in any sense sculpturesque ; who fell into precisely the same error of applying the pictorial principle to an entirely different art, and who showed that although he undoubtedly knew a good deal about lions, yet he knew next to nothing about bronze sculpture.

The little engraving given of St. George by Albert Dürer is, on the other hand, a perfect example of the understanding and adaptation of means to a desired end, nothing being attempted but what the method (metal engraving) will naturally give. It is, moreover, a noble rendering of the particular subject.



ST. GEORGE, BY ALBERT DÜRER.



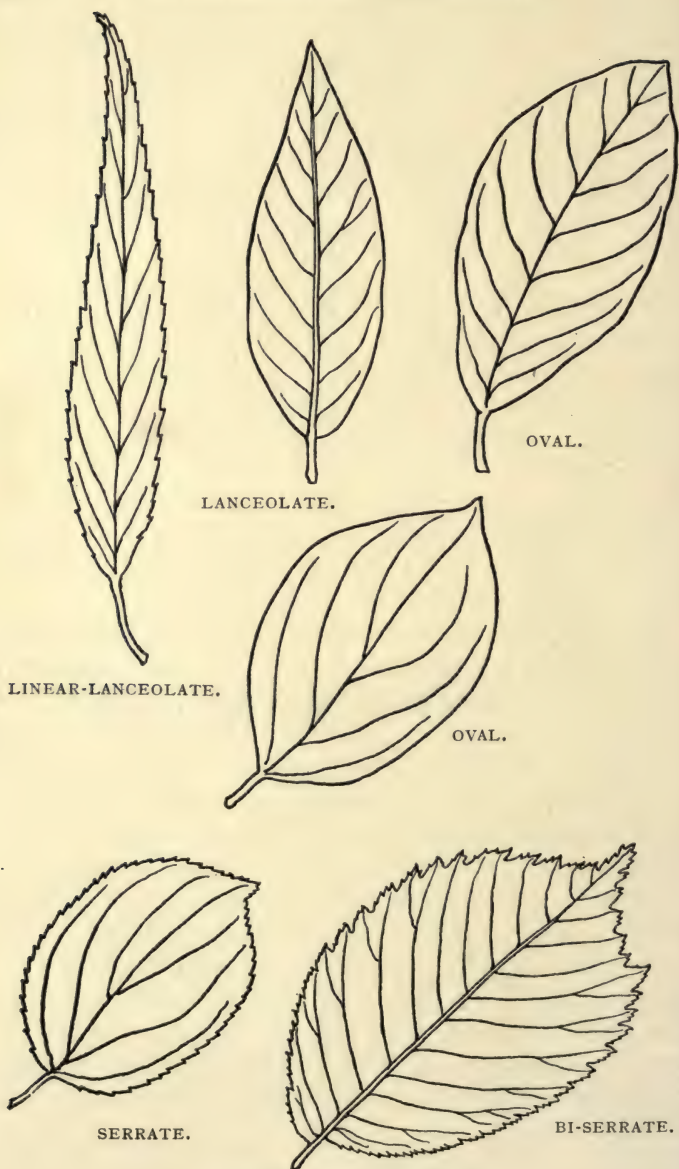
THE APPLICATION OF NATURAL FORMS TO ORNAMENT.

ALL ornament is derived directly or indirectly from natural suggestion. It is in the consideration of those general and fundamental laws which govern natural form that all ornamental systems are developed; it is nature which is the ultimate referee, and to whom we direct the final appeal.

It is nature which sets us right, keeps us within bounds, corrects our extravagances. It is in the direction of nature that we must look for any new development in the decorative arts.

It should, however, be clearly understood that in the best periods of art, ornament was based upon the observance of the general principles of nature, rather than a direct imitation of natural forms. It was nature reduced to order, or, as Ruskin very well put it, "in service." A convention was adopted, which was necessitated by the use to which the ornament was intended to serve. In flat ornament, light and shade was eliminated, as being outside the sphere of operations; in relief ornament the forms were simplified, in order to enhance their decorative effect.

The most cursory study of Egyptian ornament will serve to show how almost all their decorative motives were derived directly from nature; from the lotus and papyrus as they grow in the Nile water, from the binding of the papyrus in sheaths to protect their growth, and



VARIETIES OF LEAF FORM.



OLIVE
(OPPOSITE).



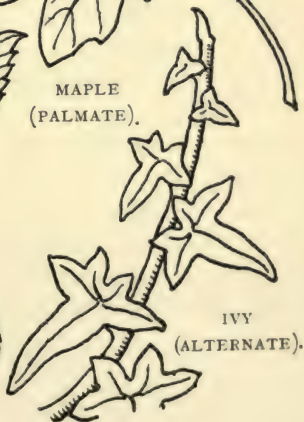
WILD ROSE
(PINNATE).



MAPLE
(PALMATE).



HORSE-CHESTNUT (DIGITATE).



IVY
(ALTERNATE).

from the twining of the convolvulus around the stem of other plants, but in every instance it was a direct and simple decorative statement, with no thought or intention of making an absolute *portrait* of the object.

The tendency in the best recent work is to keep as closely to nature as the limitations of the particular material or process will admit, and the general principles of natural growth are being more closely adhered to. A buttercup, for instance, is rightly considered an unsuitable plant for a continuous flowing pattern, as natural growth is thus violated. It is not always convenient to adhere strictly to the principle of natural growth, but wherever possible it is most desirable.

Plant growths form a rich mine of ornamental suggestion: in the general principles of their growth; in the ramification of the root; in the springing of branches from a parent stem; in the setting of the leaves on the stem: in the little bracts which are attached to the bases of leaf stalks; in the multifarious forms of the leaves themselves; in the almost endless variety of floral forms; and in the shapes of the fruit and seed.

Descriptions and illustrations of a few leading types of leaf forms are given, but the student should supplement this by a direct reference to nature.

The leaf, which is, botanically speaking, an expansion of the stem, consists usually of two parts, the stalk and the blade.

Some leaves, however, have no stalks, in which case they are called *sessile*. The leaf contains ribs and veins which branch in different ways. If they are so arranged that they form a kind of network they are said to be *reticulated*, as in the currant, the cherry and the oak; if they run along side by side, as in grasses, they are *parallel*.

Leaves are said to be *simple* when, however much they are divided, they do not separate into distinct pieces; those of the willow, (linear-lanceolate, p. 156), and the



FORGET-ME-
NOT.

WILD
STRAWBERRY.

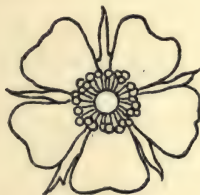
IVY.

CAMPION.

PRIMROSE.



MARSH MARIGOLD.



WILD ROSE.



COLUMBINE.



FORMS OF FLOWERS.

maple (p. 157), are *simple*, although in the latter they are divided. But if they are cut up into distinct pieces they are called *compound*, as in the pea and in the ash.

If leaves grow in pairs upon the stem, exactly opposite each other, as in the olive and the willow, they are said to be *opposite*. If they grow one above another alternately, as in the ivy, they are called *alternate*. If they are divided up like the fingers of the hand, as in the horse-chestnut, they are called *digitate*. If they are cut up into distinct leaflets, as in the wild rose or the pea, they are called *pinnate*.

The word *sagittate* is derived from Sagittarius the Archer, and is applied to all arrow-headed leaves, the arrow-head itself, the convolvulus, and others.

The varieties of leaf form are most prolific in ornamental suggestion. Many rosettes in Roman and cinque-cento ornament are entirely made up of leaves. Flowers, however, afford contrast both of form, and especially of colour.

The plan and profile of a number of five-petalled flowers is given (p. 159), and serve to illustrate development and the degree of variety which is to be found in natural form. The same variety exists in three, four, six and multi-petalled flowers.

Plants are, however, by no means the only sources of ornamental suggestion in nature. A lesson may be learned from the Japanese in their close observance of the habits and characteristics of animals. The movement and structure of animals, and the flight of birds, offer suggestions which are not sufficiently made use of in ornament. Indeed, a good ornamentist will derive ornament from the commonest object of daily use. It suffices only to keep in mind those principles which are always observed in the best periods of art and which, after all, are merely founded upon reason and common sense.

THE CLASSES OF ORNAMENT.

SYMBOLIC, MNEMONIC, ÆSTHETIC.

THERE are three great classes of ornamental design : symbolic, which is a figurative expression of a definite idea ; mnemonic, which consists of written characters, signs, hieroglyphics, &c. ; æsthetic, in which the purpose is solely decorative, without any distinct or definite meaning other than an appreciation of the beautiful.

The two first divisions, however, not only overlap each other but may be said to be intimately connected, as in Egyptian art (for example), which is in the nature of a symbolic language, both divisions or classes figure largely. Further, there are few examples of either symbolic or mnemonic art which are not also æsthetic in their purpose and intention.

It is not generally realised how largely symbols and the symbolic enter into the ordinary affairs of life. The crown and sceptre of the king, the vestments and robes of priest and judge are symbols of their office. “ By symbols, accordingly, is man guided and commanded, made happy, made wretched. He everywhere finds himself encompassed with symbols, recognised as such or not recognised.” “ Have not I myself known five hundred living soldiers sabred into crows’-meat for a piece of glazed cotton, which they called their Flag ; which, had you sold it at any market-cross, would not have brought above three groschen ? Did not the whole Hungarian nation rise, like some tumultuous moon-stirred Atlantic, when

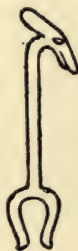
Kaiser Joseph pocketed their Iron Crown; an implement, as was sagaciously observed, in size and commercial value



ANKH.



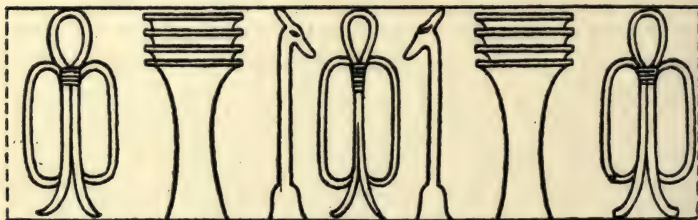
THET.



UAS.



DAD.



EGYPTIAN SYMBOLISM.

little differing from a horseshoe? It is in and through symbols that man, consciously or unconsciously, lives, works, and has his being." "Under a like category, too,

stand, or stood, the stupidest heraldic coats-of-arms; military banners everywhere; and generally all national or other sectarian costumes and customs. They have no intrinsic, necessary divineness, or even worth; but have acquired an extrinsic one. Nevertheless, through all these there glimmers something of a Divine idea of duty, of heroic daring, in some instances of freedom, of right. Nay, the highest ensign that men ever met and embraced under, the Cross itself, had no meaning save an accidental extrinsic one" (Carlyle, "Sartor Resartus," Book III., Chap. III.).

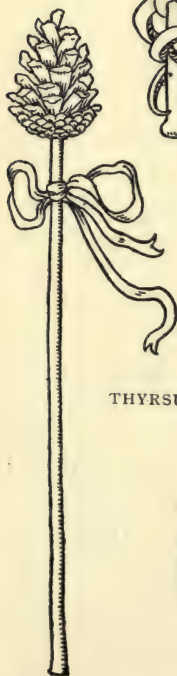
It is accordingly not surprising that symbolism should play such an important part in the art of most ages and countries; with the Egyptians, as has been hinted, symbolism and mnemonic inscription was the chief means of expressing their thoughts and ideas.

Egyptian ornament, however, was by no means always symbolic. The lotus, as Professor Flinders Petrie observes, was not a sacred plant, was not associated with any particular divinity, and may be said to be always introduced with a purely æsthetic purpose. But there are certain emblematic and symbolic devices which constantly appear in Egyptian decoration; as the winged globe with aspic supports, symbolising Divine protection and material power, the globe representing Ra the sun; the scarab, or sacred beetle, the emblem of immortality, rolling the pellet containing an egg to a safe place, where it buries it; or supporting the disc of the sun between its claws.

The most usual hieroglyphs introduced in Egyptian ornament are, the *ankh*, a girdle, or symbol of life; the *thet*, another form of girdle; the *uas*, representing authority and power; and the *dad*, a row of columns, the symbol of stability. Professor Flinders Petrie, in his "Egyptian



CADUCEUS.



THYRSUS.

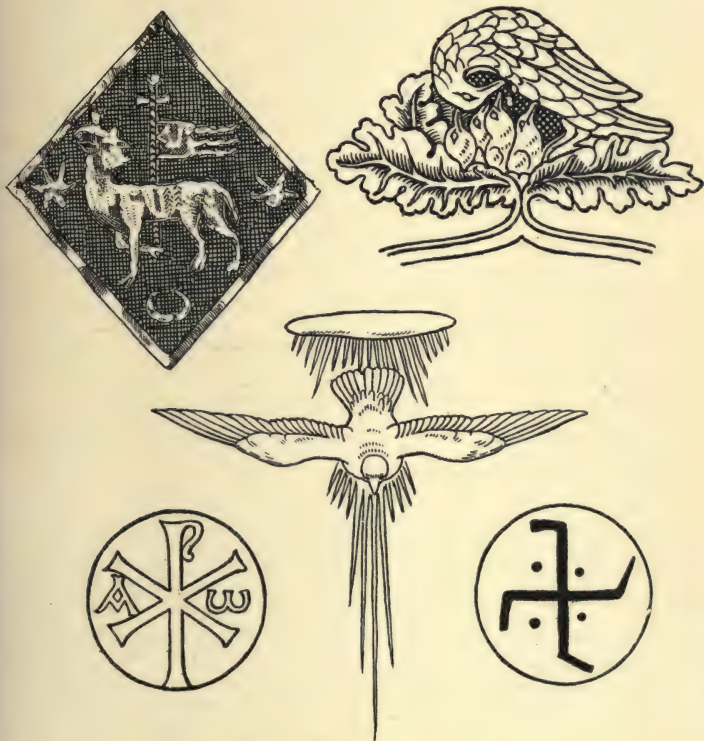


CORNUCOPIA.

FOOL'S
BAUBLE.

EXAMPLES OF SYMBOLISM.

Decorative Art" gives an illustration of a combination of the *thet*, *dad* and *uas*, carved in relief on the wooden panels of a litter of the 12th dynasty. (See p. 162.)



CHRISTIAN SYMBOLISM.

With the Greeks, although Greek conventional ornament was almost entirely æsthetic, symbolism and allegory entered largely into their architectural, sculptural and painted figure decoration.

The Greek religion was a worship of the beauty of outward nature, and the various natural forces were symbolised in the persons of their deities. Athene is the air, the personification of the pure ether. She is the goddess of wisdom, of war, and the patron of the arts; Poseidon is the sea; Pan is the sylvan god.

In the story of Cupid and Psyche, one of the latest of the Greek myths, is symbolised the union of love with the soul. Psyche was represented with the wings of the butterfly, as the butterfly was regarded as the emblem of the soul, and was figured as escaping from a vase with the lid partially open. The butterfly may indeed be regarded as a fitting symbol of eternity, as the caterpillar constructs for itself a cradle or sarcophagus, sleeps for a season, and in due course emerges from it as a perfect insect.

Christian art is permeated through and through with symbolism. In architecture the plan of the church takes the form of the Cross, the chief symbol of the sorrows and sufferings of the Redeemer.

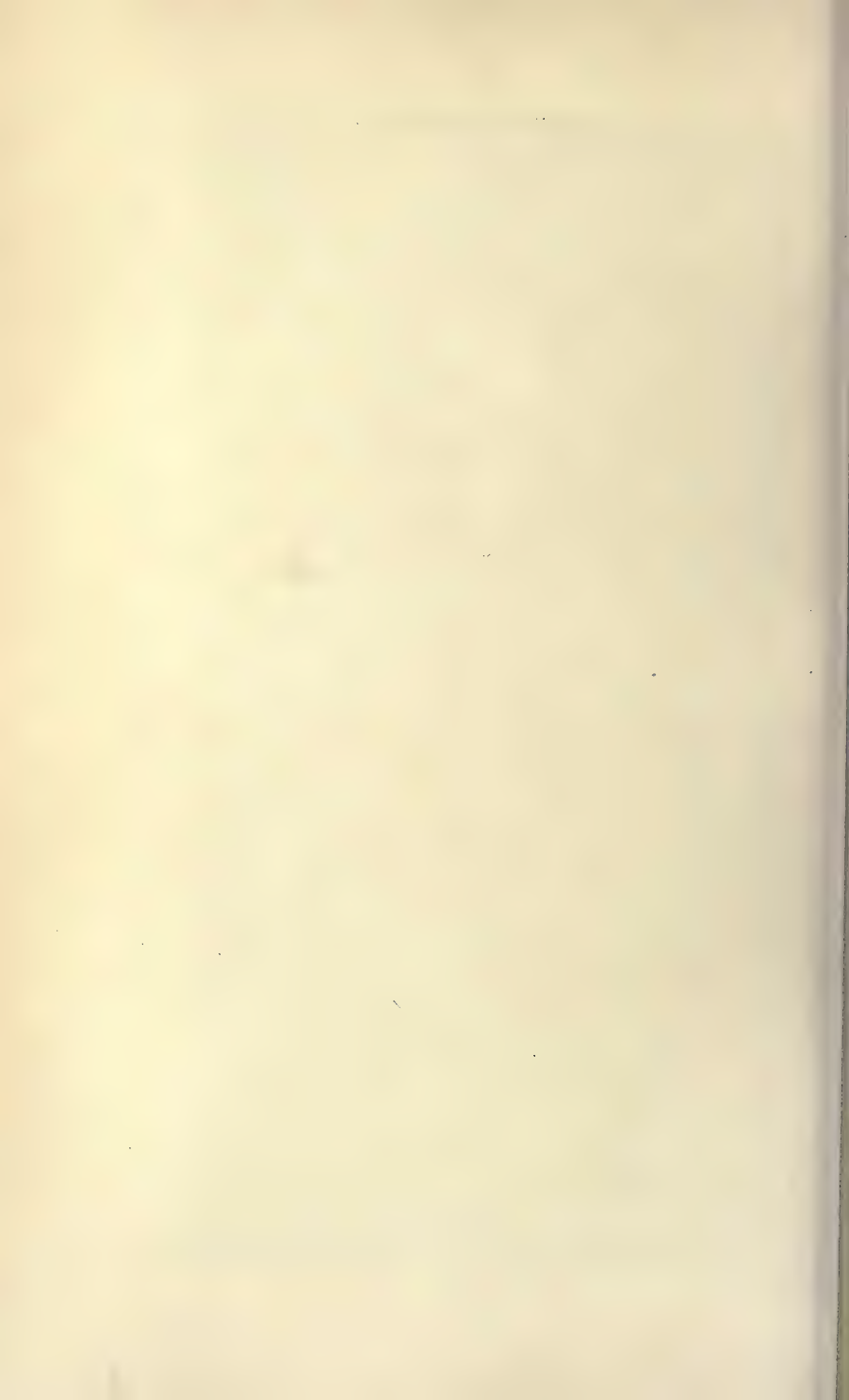
The fish was the earliest of the Christian emblems, the symbol of water and the rite of baptism, and also because the five Greek letters which express the word fish, form the anagram of the name of Jesus Christ. This and the sacred monogram were the chief symbols used by the early Christians.

The lamb is the symbol of the Redeemer. The pelican, which feeds its young with the blood from its breast, is also a symbol of the Redemption. The peacock is the emblem of immortality; the olive, of peace; the palm, of victory; the lily, of purity; the anchor, of firmness, hope and patience.

The vine, as the emblem of Christ, "the true Vine," plays an important part in Christian art. It figures

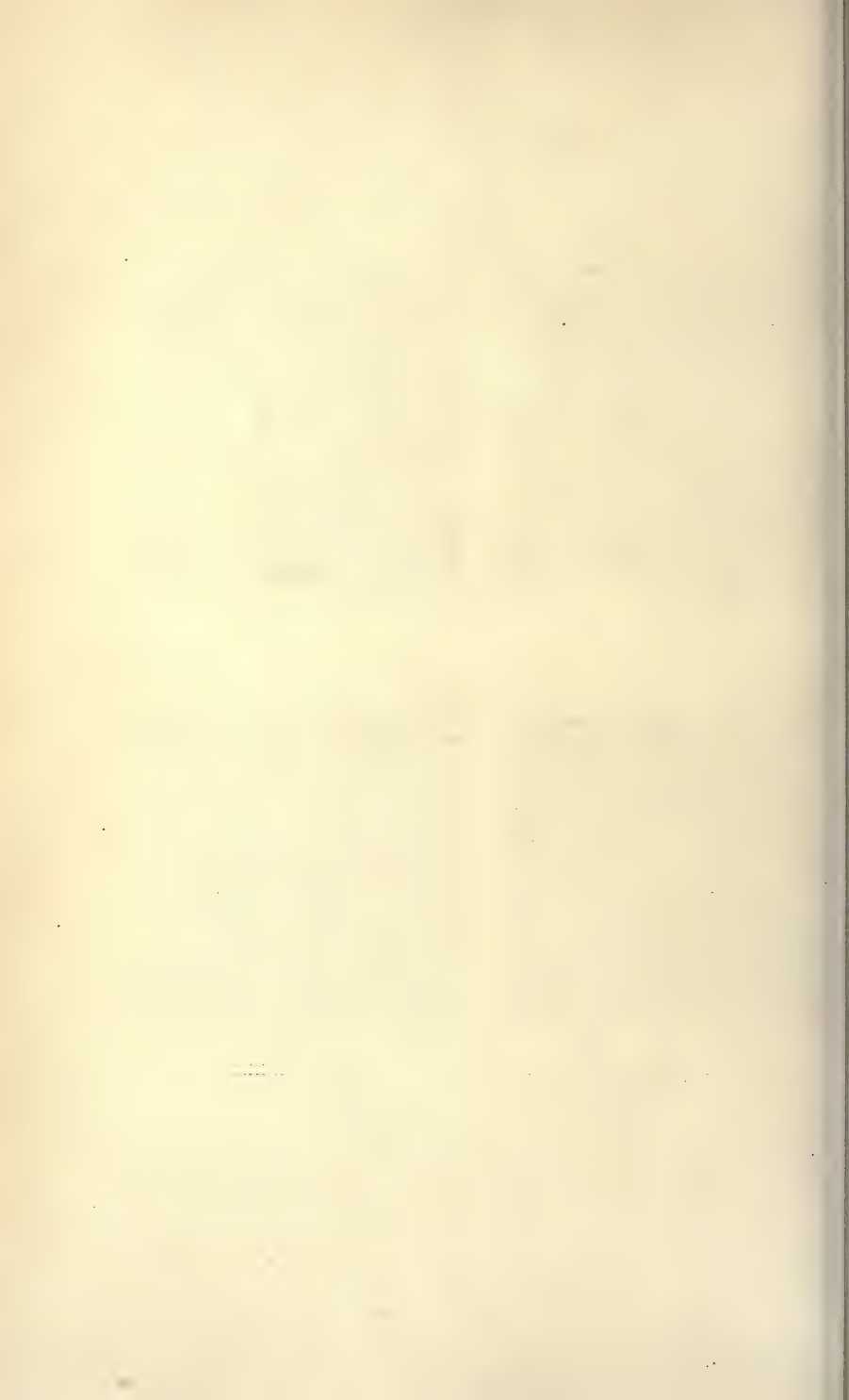


FRONT OF A MARBLE ALTAR OR SHRINE, FROM ASSISI.—ITALIAN 13TH CENTURY, VICTORIA AND ALBERT MUSEUM.





THE SYMBOLS OF THE EVANGELISTS.—BRONZE PANELS BY
DONATELLO, SAN ANTONIO, PADUA.

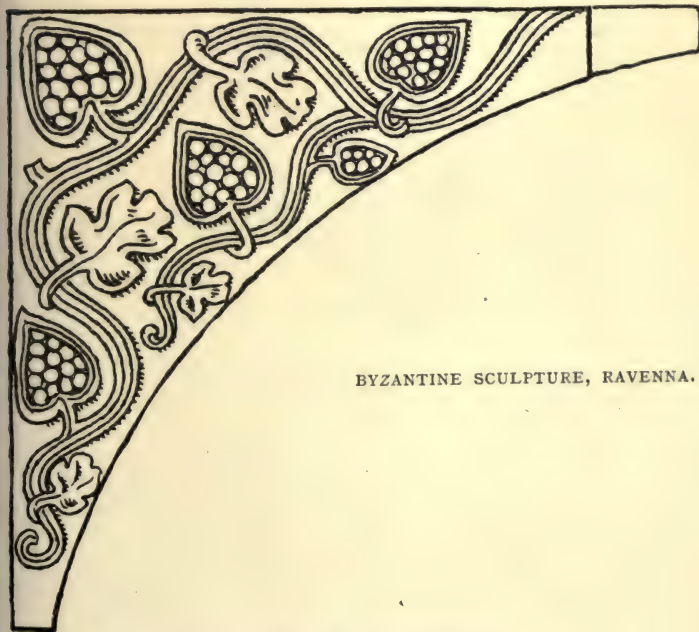




ROOD SCREEN, SOUTH POOL CHURCH.



TEXTILE FABRIC, 15TH CENTURY.



BYZANTINE SCULPTURE, RAVENNA.

THE VINE IN ORNAMENT.



THE VINE, FROM "STUDIES IN PLANT FORM," BY G. WOOLLISCROFT RHEAD.

largely as architectural enrichments (see Illustration of rood screen from South Pool Church, p. 167). It is used in the decoration of Christ's robe, and is occasionally intertwined in His celestial crown. In an early cartoon for stained glass representing the Good Shepherd, by Sir Edward Burne-Jones, the lamb in Christ's arms is depicted as cropping the young tendrils of the vine which is entwined round the slouched hat of the figure—a beautiful thought.

The Evangelists are symbolised by an angel, a lion, a bull and an eagle, representing SS. Matthew, Mark, Luke and John respectively.

Colours are also used in Christian art in a symbolical sense. White is the emblem of light, purity, innocence, faith; red, Divine love and the Holy Spirit; blue expresses heaven, the firmament, truth, constancy; grey and black denote mourning, humility, wickedness, death.

Mnemonic is that class of ornament in which writing or inscription is introduced. It forms an important part of much Eastern art, especially Saracenic, but also of Persian, Indian, Chinese and Japanese. The example given as an illustration of "superposition" (p. 126) may be cited as an instance of mnemonic art. It forms portion of a frieze in the Mosque of Sultan Hâsan at Cairo, and the inscription is superimposed upon a rich groundwork of conventional ornament.

The art of illumination must also be classed as mnemonic. Examples of illumination are given and referred to under the head of "The Book and its Decoration."

The æsthetic principle is the purely artistic principle, created only from the love of the thing itself, and is in no sense didactic.

THE GROTESQUE IN NATURE AND ART.

THE grotesque, both in nature and art, covers a wide field, and would provide sufficient material for a large and entertaining volume. In nature it is seen very commonly in fishes, particularly in the denizens of the deeper waters, in which case the type is a low one; in reptiles, in which the type is also in many instances degraded; in bats; in many tropical insects, and even in flowers.

Dr. Johnson's somewhat unsatisfactory definition of the grotesque is: "Distorted of figure, unnatural;" it is indeed somewhat difficult to determine between what may be fairly described as the grotesque, and the merely unfamiliar in nature. One would say that the grotesque in nature mainly consists in the unconscious mimicry by one object of another. A man, for instance, cannot in any sense be regarded as grotesque, despite Carlyle's grotesque description of him, as "a forked radish with a head fantastically carved;" but the spectacle of a number of little men, representing the petals of flowers, and dangling from their calyxes, as in the man-orchis, is undeniably grotesque. The remarkable Sturt pea also, suggests the "ghosts" which children make upon their fingers with the aid of a pocket handkerchief tied in a knot, and the idea of the grotesque is emphasised by the large black "eye" of the flower.

In the animal kingdom the penguin, which is seen in crowds upon the rocks and shores of the Cape of Good Hope and the Falkland Islands, resemble children in

white pinafores, with their little travesties of wings hanging like miniature arms by their sides.

The remarkable "fucus-like sea-horse" is an instance of



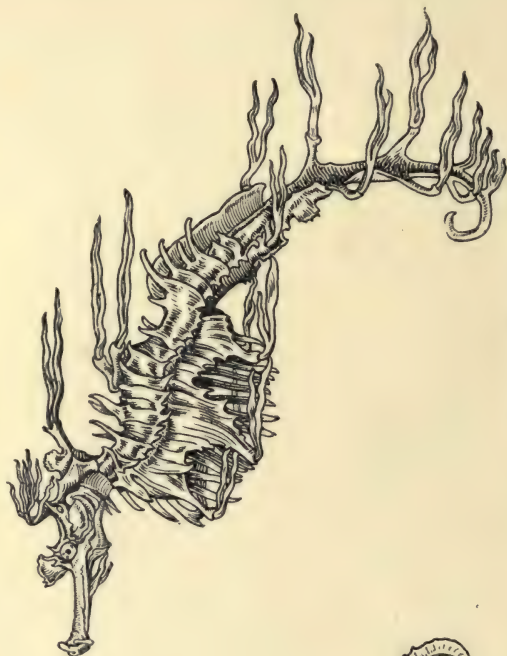
STURT PEA.



MAN-ORCHIS.

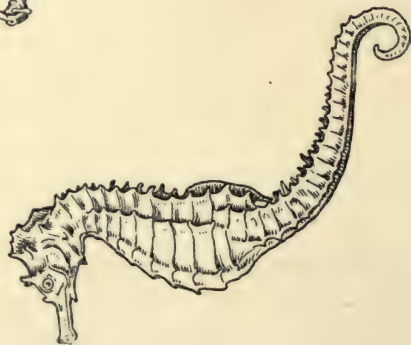
THE GROTESQUE IN FLORAL FORM.

the grotesque, independent of any resemblance or fancied resemblance either to the horse, or to the seaweed amongst which the creature lives. It would be difficult to carry the sense of the grotesque farther than it is carried in this extraordinary creature. It is also a remarkable instance



FUCUS-LIKE SEA-HORSE.

THE GROTESQUE IN ANIMAL FORM.



COMMON SEA-HORSE.

of "development" from the common sea-horse, an illustration of which is also given. No degree of familiarity with the form of this animal could eliminate from it the sense of the grotesque.

The bat, however, which is a familiar object to most of



THE GROTESQUE.—ILLUMINATED MS., ANGLO-SAXON
(BRITISH MUSEUM).

us, is universally regarded as grotesque, and we never seem to recover from the sense of strangeness which this singular union of mouse and bird gives; its nocturnal habits, its mode of sleeping, hung up by claws or hooks; the remarkable character and shape of its wings, bare skeleton with a thin film of skin between, which have

suggested the character of the wings of devils and demons of every period, all combine in conveying the idea of the grotesque.

It is questionable whether any of the higher animals could properly be described as grotesque. The elephant, however, which is a familiar animal, most certainly *savours* of the grotesque, and we can imagine the amazed wonder and astonishment which a first sight of the form of this animal would create—the elongated snout and teeth, the small eyes, the ridiculous little tail, and general



THE GROTESQUE.—ILLUMINATED MS., CELTIC (BRITISH MUSEUM).

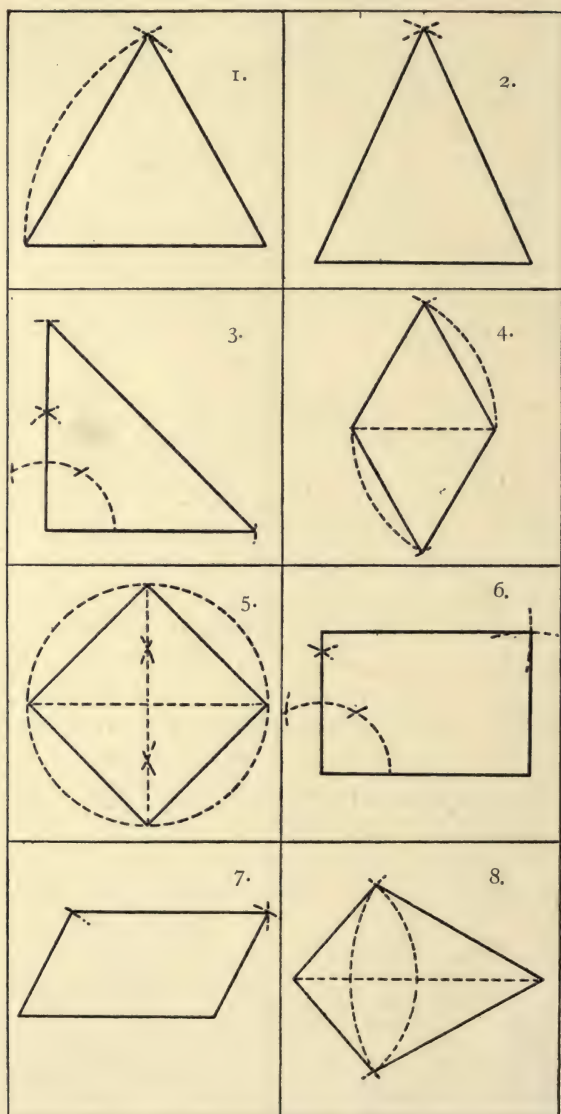
shambling gait. It is as if nature, tired of developing tails, and recognising that a limit must be made even with this appendage, had, as an entirely new motive, developed a tail at the reverse end of the animal. It is nature in one of her humorously sportive moods; wonderful, most impressive, but certainly suggestive of the grotesque.

The grotesque in art occurs in all ages and countries; in the bone-scratchings of prehistoric man; in the ornament of savage tribes; in the capitals, corbels and gargoyles of Byzantine and Gothic buildings; in illuminated missals; in Sicilian and other broderings; in

Scandinavian wood-carving. It is also an important factor in Italian Arabesque ornament, and is commonly seen in Chinese and Japanese bronzes, pottery and other objects.

Ruskin, in a powerful chapter on the Grotesque Renaissance, in the 4th volume of "The Stones of Venice," gives the following definition of the grotesque: "First, then, it seems to me that the grotesque is in almost all cases compounded of two elements, one ludicrous, the other fearful; that, as one or other of these elements prevails, the grotesque falls into branches, sportive grotesque and terrible grotesque; but that we cannot legitimately consider it under these two aspects, because there are hardly any examples which do not in some degree combine both elements; there are few grotesques so utterly playful as to be overcast with no shade of fearfulness, and few so fearful as absolutely to exclude all idea of jest."

The border line of the grotesque is indeed more strongly marked in art than it is in nature. The grotesque appears to be a special characteristic of the mediæval mind. With the classic nations, especially the Greeks, it was less so. The comic and tragic masks in which the actors of the Greek theatre masqueraded, may, however, be cited as an instance of the grotesque.



THE GEOMETRICAL BASIS.

GEOMETRY is a most important factor in ornament, since it forms the basis of almost all surface patterns. It is also the principle upon which all symmetrical flowers are constructed. A few illustrated problems are therefore given which are useful in the setting out of all-over repeating patterns, together with illustrations of the following geometrical forms:—

An equilateral triangle is a figure of three equal sides. (Fig. 1.)

An isosceles triangle is a triangle in which two sides only are equal. (Fig. 2.)

A right-angled triangle is that in which two sides form a right angle. (Fig. 3.)

A diamond consists of two equilateral triangles placed base to base. (Fig. 4.)

A lozenge is a square set angle-wise. (Fig. 5.)

A parallelogram is a four-sided figure with two long and two shorter sides equal. (Fig. 6.)

A rhomboid is a parallelogram placed on the diagonal. (Fig. 7.)

A trapezium is a four-sided figure which has none of its sides parallel, but which may have two of its sides equal. (Fig. 8.)

Regular polygons are figures which have equal sides and equal angles.

Polygons are named according to the number of their sides, as follows:—

A pentagon has five sides.

A hexagon six.

A heptagon seven.

An octagon eight.

A nonagon nine.

A decagon ten.

Problem 1.—To construct a pentagon on a given line A B.

Produce A B, and with centre A and radius A B describe a semicircle. Divide the semicircle into five equal parts. Join A with 2, giving another side of the polygon. Bisect the two sides A B and A 2 by lines meeting at O giving the centre of the polygon. With centre O and radius O B describe a circle. Mark off B E and E D equal to A B. Join B E, E D, D 2, forming the pentagon.

Problem 2.—To construct a regular hexagon.

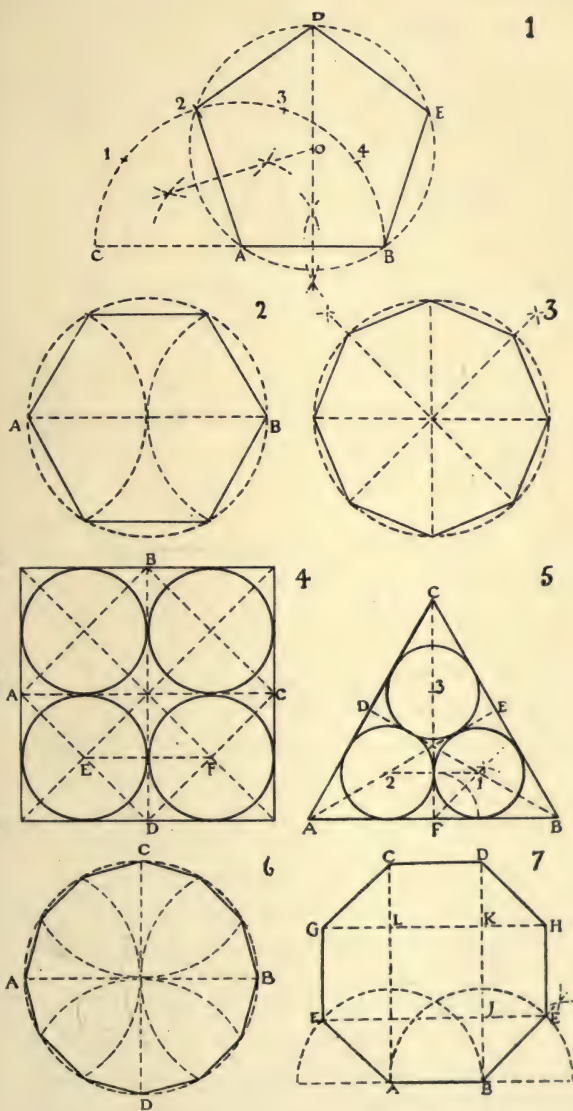
Describe a circle, and draw the diameter A B. With centres A and B set off the radius on each side. Join the points.

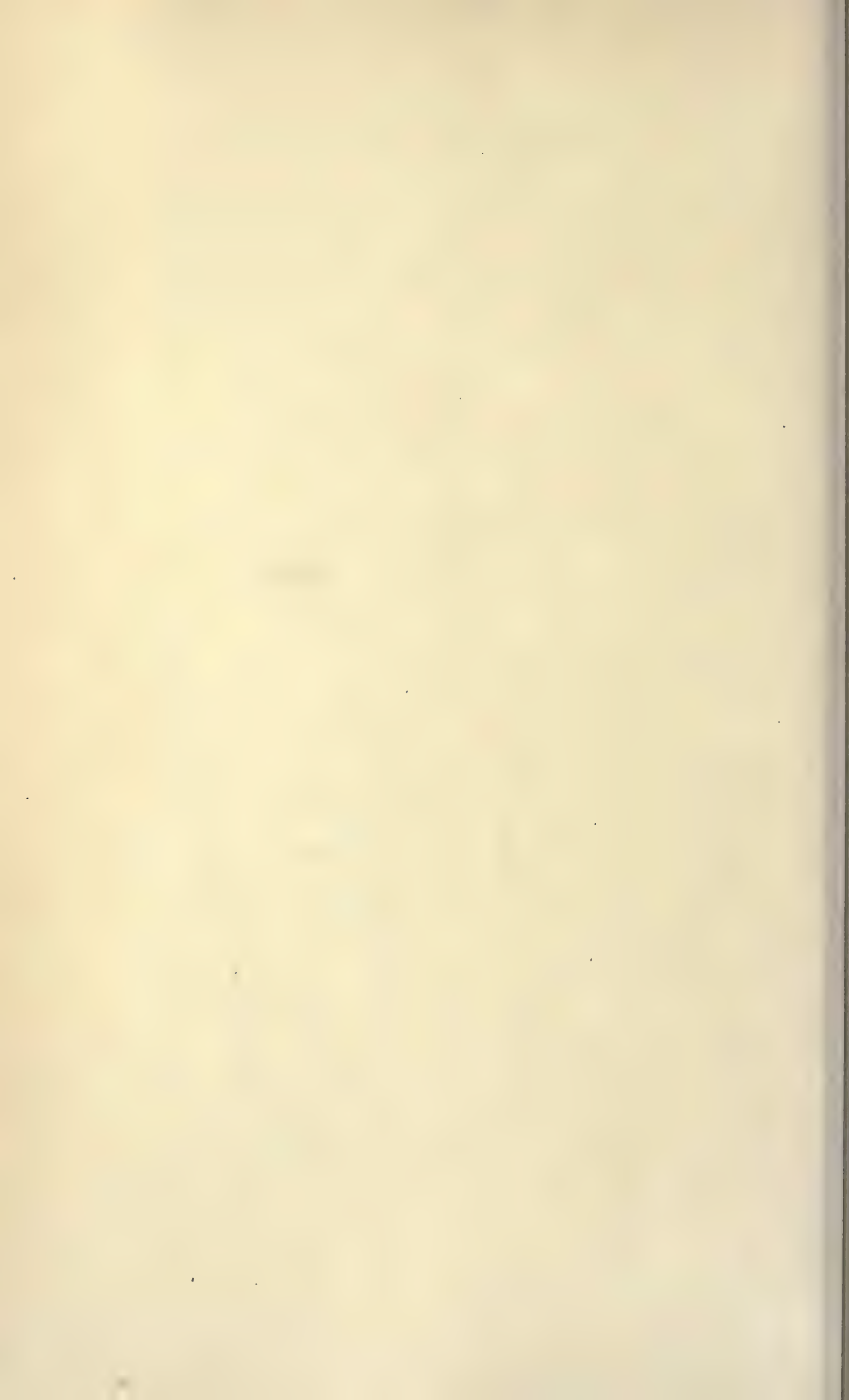
Problem 3.—To construct a regular octagon.

Describe a circle and draw two diameters at right angles to each other. Bisect each quadrant thus formed, cutting the circumference into eight equal portions. Join the points thus obtained,

✓ *Problem 4.*—To inscribe four equal circles within a square, each touching two sides and two circles.

Draw the diagonals and diameters of the square. Draw the diagonals A B, B C, C D, D A, giving the centres of each of the four squares. For the radius of the circles join E and F.





✓ *Problem 5.*—To inscribe three equal circles within an equilateral triangle, each touching two sides and two circles.

Bisect each of the angles by the lines AE , BD , and CF , thus dividing the triangle into three equal trapeziums. Bisect the angle CFB obtaining centre 1. Set off centres 2, 3. To obtain the radius join 1, 2. With centres 1, 2, 3, describe a circle in each trapezium.

Problem 6.—To construct a regular duodecagon.

Describe a circle and draw the diameter AB . Bisect it at right angles with the diameter CD . With centres A, B, C, D , describe arcs passing through the centre of the circle and cutting the circumference. Join the points thus obtained.

Problem 7.—To construct a regular octagon on AB .

Erect perpendiculars at A and B . Produce AB both ways. With centres A and B and radius AB describe quadrants. Bisect each quadrant obtaining BE and AF , two more sides of the octagon. From E and F draw parallels to AC and BD and make them equal to AB . Join EF and GH . Make KD and LC equal to JB . Join to points H, D, C, G .

Problem 8.—To describe an equilateral triangle within and without a given circle.

Draw six radii dividing the circle into six equal parts. Join their alternate extremities as at DEF . This makes the required equilateral triangle within the circle. Draw tangents to the circle at DEF . Produce the radii to meet the tangents at ABC . ABC is the equilateral triangle without the circle.

Problem 9.—To construct a trefoil of three equal semi-circles within an equilateral triangle having their diameters adjacent, and each touching one side of the triangle.

Bisect each angle of the triangle by the lines A D, B E, and C F. Bisect the angle C F B by the line F G. From G draw G J, G H parallel to A B, B C. Join J and H. On the lines H G, G J, J H, describe semicircles forming the trefoil.

Problem 10.—To inscribe four equal semicircles in a square, having their diameters adjacent, and each touching one side of the square.

Draw the diagonals and diameters of the given square. Bisect one of the angles at A and obtain the inner square. Describe a semicircle on each side of this square, forming the quatrefoil.

Problem 11.—To inscribe five equal semicircles in a pentagon, each touching one side and having their diameters adjacent.

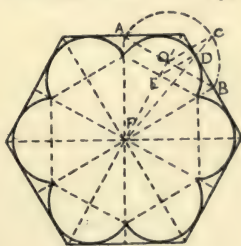
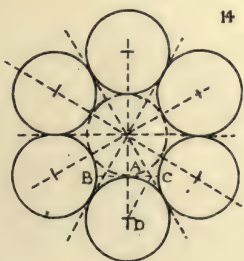
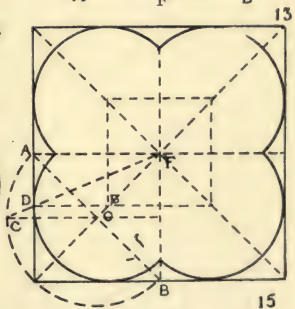
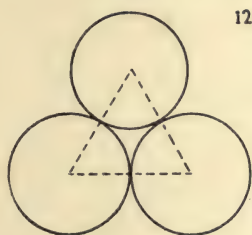
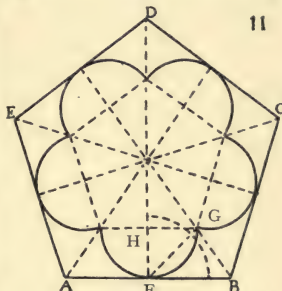
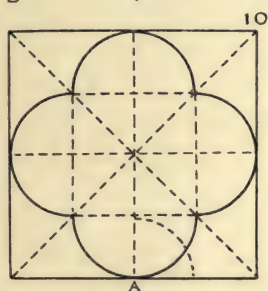
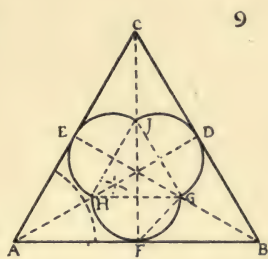
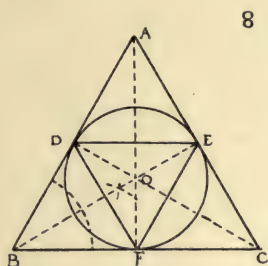
Divide the pentagon into equal isosceles triangles. Bisect one of the angles at F, obtaining point G. Draw a parallel with A B through G, cutting the centre line at H. With centre H and radius H F describe a semicircle.

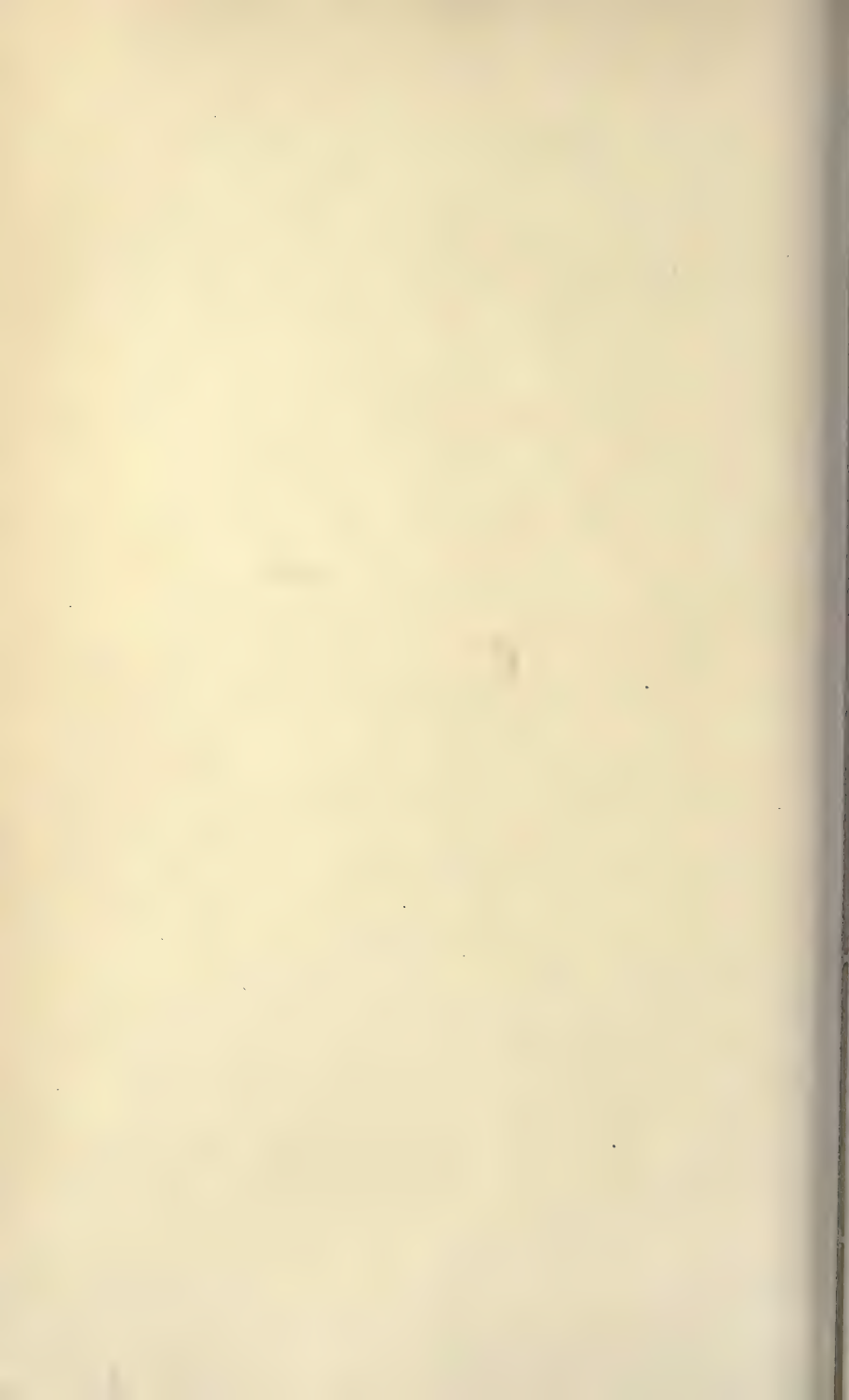
Problem 12.—To describe a trefoil of tangential circles, the radius being given.

Construct an equilateral triangle having each of its sides double the given radius. From each angle with the given radius describe the circles.

Problem 13.—To inscribe four equal semicircles in a square, having their diameters adjacent, and each touching two sides of the square.

Draw the diameters and diagonals of the given square, and in one of the four squares obtained, inscribe a semicircle. Draw the diagonal from A to B, and obtain O. From centre O and radius O A describe a semicircle. From O draw O C at right angles to the side of the square. Draw C F and from D where the line C F





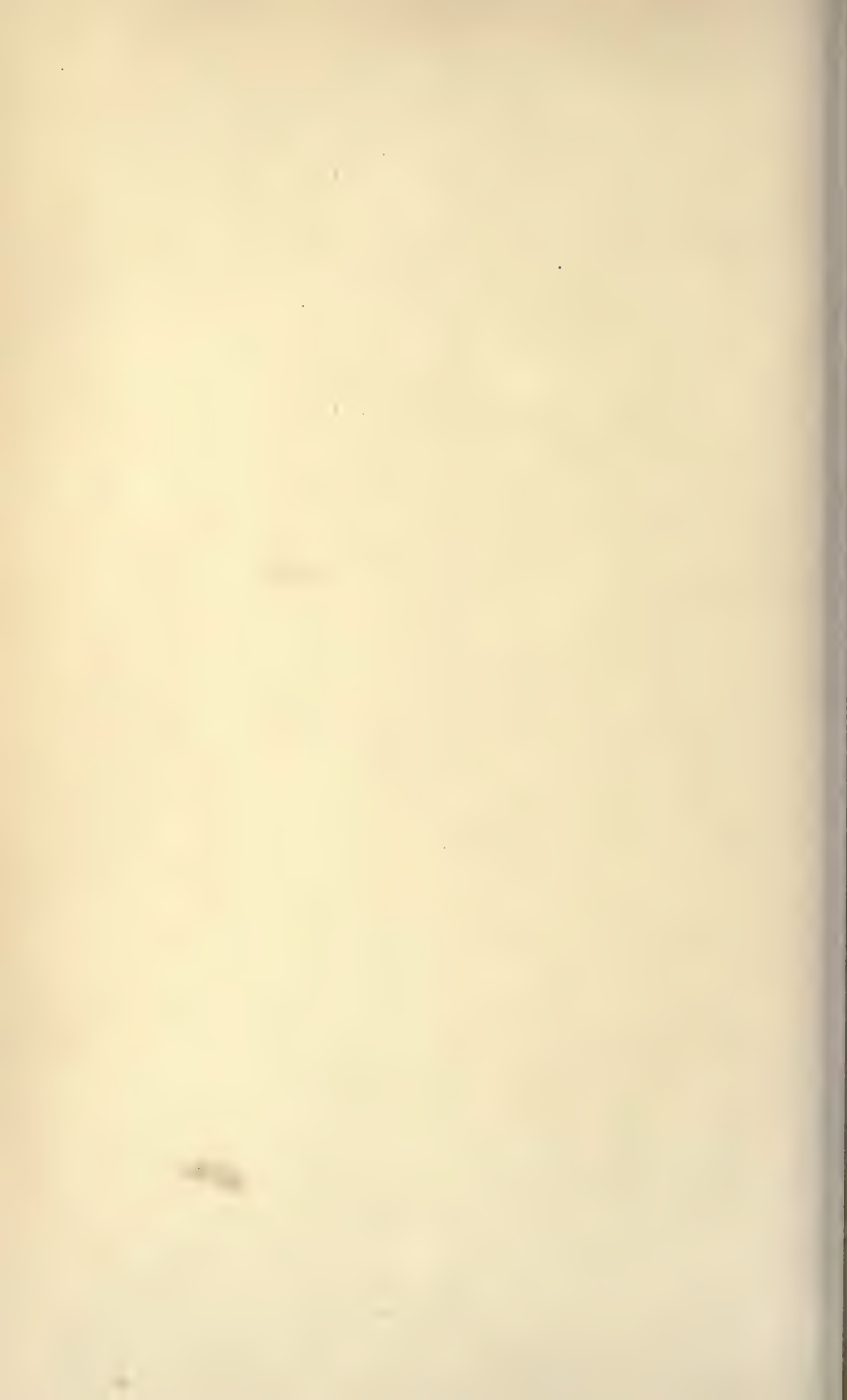
cuts the side of the square draw D E parallel to C O. E being the centre of the required semicircle.

Problem 14.—To describe six circles about a circle.

Divide the given circle into twice as many sectors as there are circles required and produce the diameters. At A draw a tangent B C. Bisect the exterior angle at C. D is the centre for one of the circles. Set off the other centres and describe the circles.

Problem 15.—To inscribe in a regular hexagon a number of equal semicircles, having their diameters adjacent and each touching two sides of the polygon.

Draw the diameters and diagonals of the polygon, cutting it into six equal trapeziums. Draw A B, the shorter diagonal of the trapezium, and on it describe a semicircle. From O draw O C perpendicular to the side of the trapezium. Draw C F and from D draw D E parallel to C O. Through E draw a line parallel to A B and upon it describe the required semicircle. Finish as shown.



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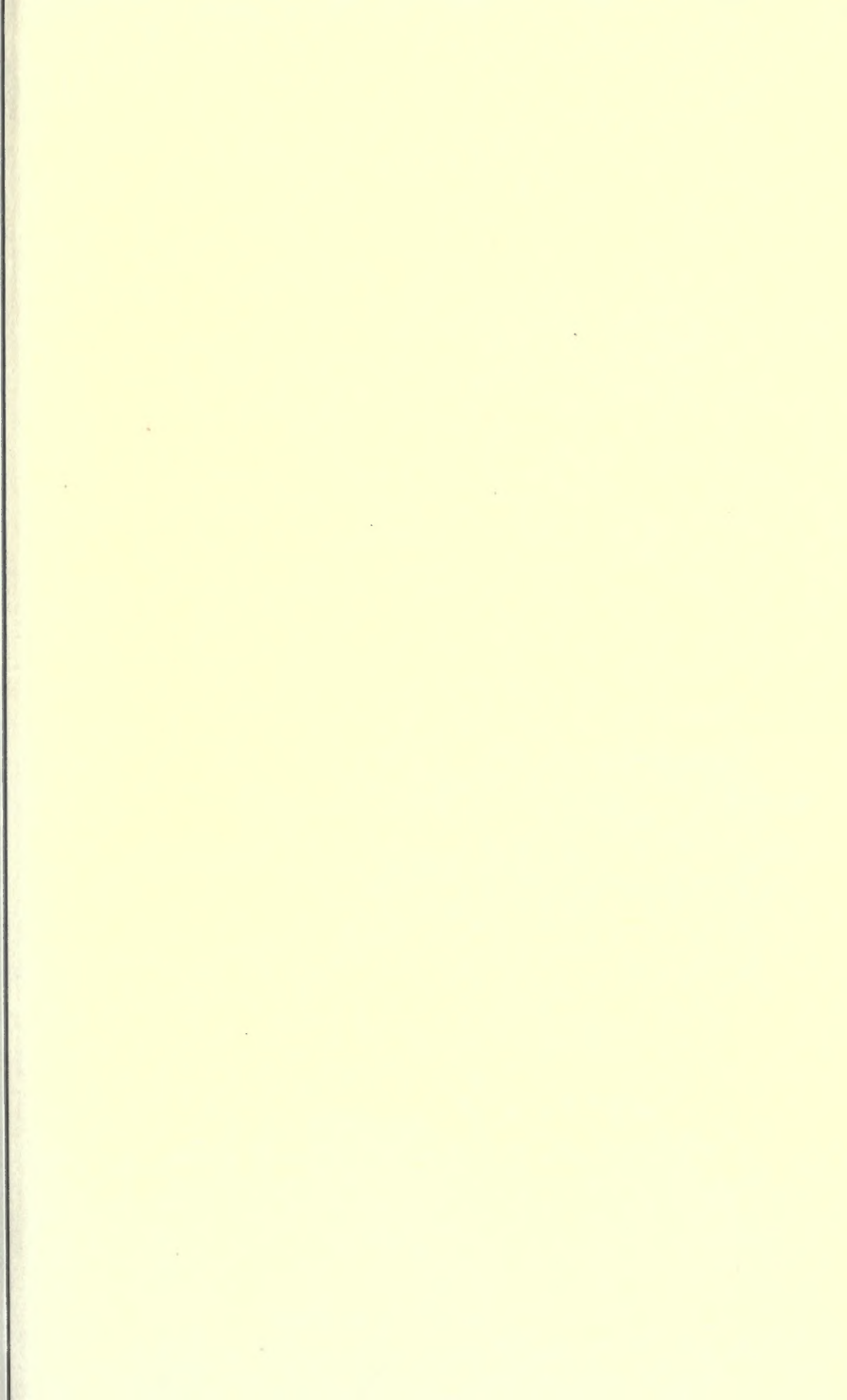
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